Final project

Work on a project it could be a simple library management system, a basic chat application, or a calculator. You can choose any project of your choice. You may work on your own or in teams of 2 to 4

couple of examples for the Final Project

-To do List

- Blog Platform

-Product Landing page

-Games

-Online booking system, etc

Create a presentation of your project explaining

-Introduction

-Working

-Uses

-Advantages & Disadvantages

-Future scope

simple library management system

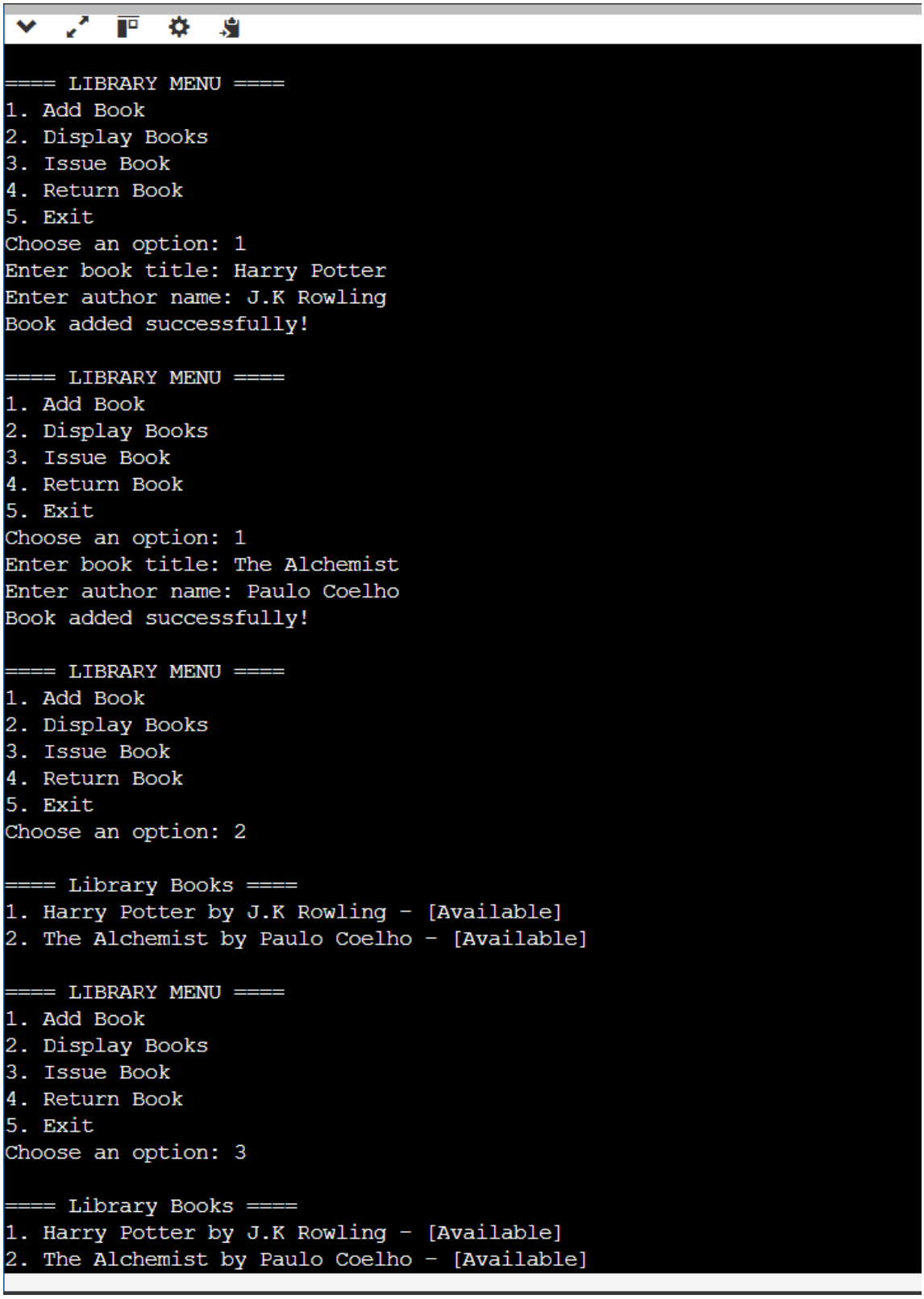
JAVA PROGRAM

```
 import java.util.ArrayList;
import java.util.Scanner;

class Book {
    String title;
    String author;
    boolean isIssued;

    Book(String title, String author) {
        this.title = title;
        this.author = author;
        this.isIssued = false; // default is not issued
    }
}

public class LibraryManagementSystem {
    static ArrayList<Book> books = new ArrayList<>();
    static Scanner scanner = new Scanner(System.in);

    // Method to add a new book
    public static void addBook() {
        System.out.print("Enter book title: ");
        String title = scanner.nextLine();
        System.out.print("Enter author name: ");
        String author = scanner.nextLine();

        books.add(new Book(title, author));
        System.out.println("Book added successfully!");
    }

    // Method to display all books
    public static void displayBooks() {
        if (books.isEmpty()) {
            System.out.println("No books in the library.");
        } else {
            System.out.println("\n==== Library Books ====");
            for (int i = 0; i < books.size(); i++) {
                Book b = books.get(i);
                String status = b.isIssued ? "[Issued]" : "[Available]";
                System.out.println((i + 1) + ". " + b.title + " by " + b.author + " - " + status);
            }
        }
    }
```

```
// Method to issue a book
public static void issueBook() {
    displayBooks();
    if (books.isEmpty()) return;

    System.out.print("Enter the book number to issue: ");
    int index = scanner.nextInt();
    scanner.nextLine(); // consume newline

    if (index > 0 && index <= books.size()) {
        Book b = books.get(index - 1);
        if (!b.isIssued) {
            b.isIssued = true;
            System.out.println("Book issued successfully!");
        } else {
            System.out.println("Book is already issued.");
        }
    } else {
        System.out.println("Invalid book number.");
    }
}

// Method to return a book
public static void returnBook() {
    displayBooks();
    if (books.isEmpty()) return;

    System.out.print("Enter the book number to return: ");
    int index = scanner.nextInt();
    scanner.nextLine(); // consume newline

    if (index > 0 && index <= books.size()) {
        Book b = books.get(index - 1);
        if (b.isIssued) {
            b.isIssued = false;
            System.out.println("Book returned successfully!");
        } else {
            System.out.println("This book was not issued.");
        }
    } else {
        System.out.println("Invalid book number.");
    }
}

// Display menu
public static void displayMenu() {
    System.out.println("\n==== LIBRARY MENU ====");
```

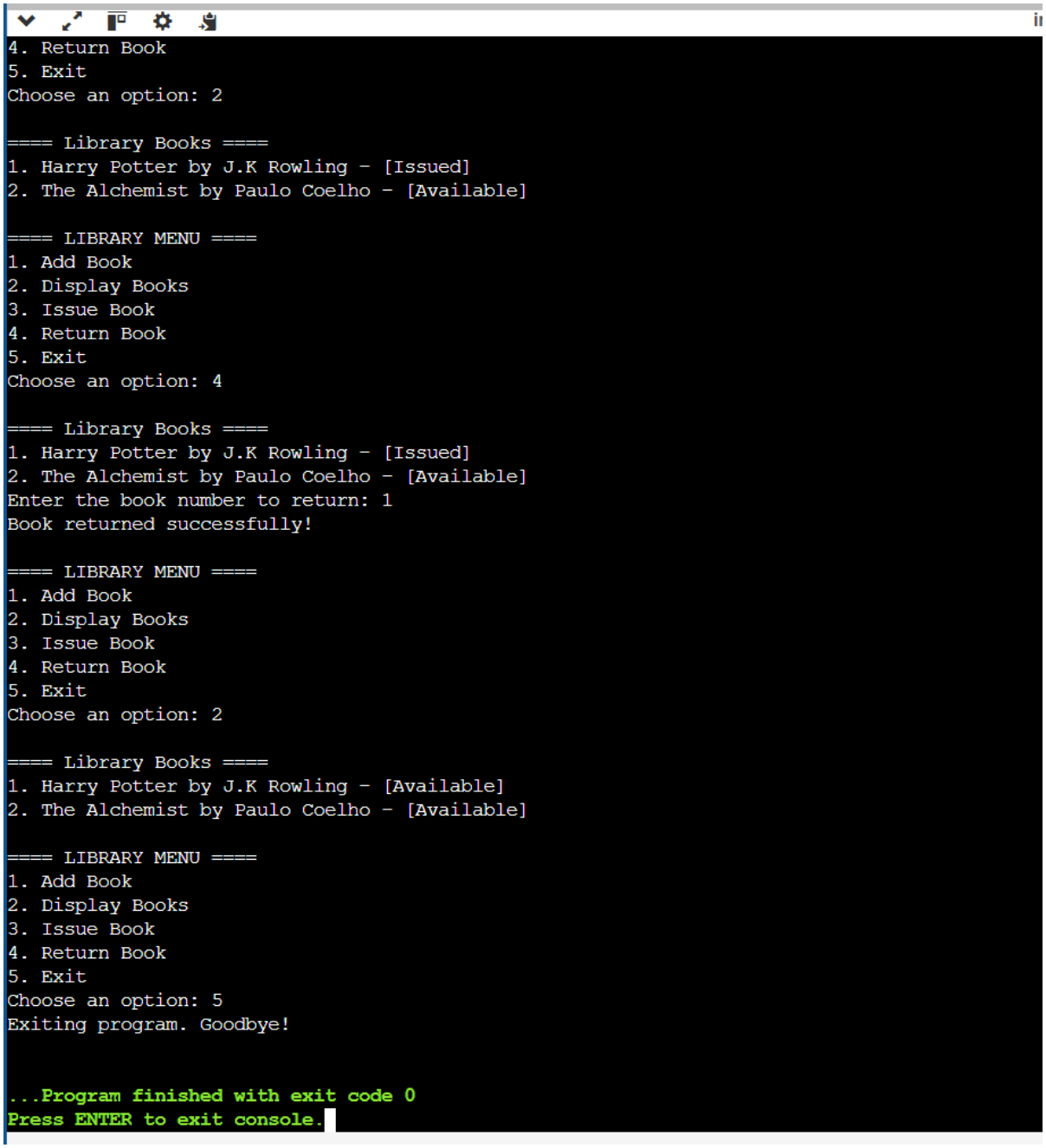
```
        System.out.println("1. Add Book");
        System.out.println("2. Display Books");
        System.out.println("3. Issue Book");
        System.out.println("4. Return Book");
        System.out.println("5. Exit");
        System.out.print("Choose an option: ");
    }

    public static void main(String[] args) {
        boolean running = true;

        while (running) {
            displayMenu();

            while (!scanner.hasNextInt()) {
                System.out.println("Please enter a valid number (1-5).");
                scanner.next();
            }
            int choice = scanner.nextInt();
            scanner.nextLine(); // consume newline

            switch (choice) {
                case 1 -> addBook();
                case 2 -> displayBooks();
                case 3 -> issueBook();
                case 4 -> returnBook();
                case 5 -> {
                    System.out.println("Exiting program. Goodbye!");
                    running = false;
                }
                default -> System.out.println("Invalid choice. Try again.");
            }
        }
        scanner.close();
    }
}
```

OUTPUT



```
==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 1
Enter book title: Harry Potter
Enter author name: J.K Rowling
Book added successfully!

==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 1
Enter book title: The Alchemist
Enter author name: Paulo Coelho
Book added successfully!

==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 2

==== Library Books ====
1. Harry Potter by J.K Rowling - [Available]
2. The Alchemist by Paulo Coelho - [Available]

==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 3

==== Library Books ====
1. Harry Potter by J.K Rowling - [Available]
2. The Alchemist by Paulo Coelho - [Available]
```

```
==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 3

==== Library Books ====
1. Harry Potter by J.K Rowling - [Available]
2. The Alchemist by Paulo Coelho - [Available]
Enter the book number to issue: 1
Book issued successfully!

==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 2

==== Library Books ====
1. Harry Potter by J.K Rowling - [Issued]
2. The Alchemist by Paulo Coelho - [Available]

==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 4

==== Library Books ====
1. Harry Potter by J.K Rowling - [Issued]
2. The Alchemist by Paulo Coelho - [Available]
Enter the book number to return: 1
Book returned successfully!

==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
```


4. Return Book
5. Exit
Choose an option: 2
==== Library Books ====
1. Harry Potter by J.K Rowling - [Issued]
2. The Alchemist by Paulo Coelho - [Available]
==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 4
==== Library Books ====
1. Harry Potter by J.K Rowling - [Issued]
2. The Alchemist by Paulo Coelho - [Available]
Enter the book number to return: 1
Book returned successfully!
==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 2
==== Library Books ====
1. Harry Potter by J.K Rowling - [Available]
2. The Alchemist by Paulo Coelho - [Available]
==== LIBRARY MENU ====
1. Add Book
2. Display Books
3. Issue Book
4. Return Book
5. Exit
Choose an option: 5
Exiting program. Goodbye!
...Program finished with exit code 0
Press ENTER to exit console.