import java.util.ArrayList;

import java.util.Scanner;

class Book

{

private String title;

private String author;

private int quantity;

public Book(String title, String author, int quantity)

{

this.title = title;

this.author = author;

this.quantity = quantity;

}

public String getTitle()

{

return title;

}

public String getAuthor()

{

return author;

}

public int getQuantity()

{

return quantity;

}

public void setQuantity(int quantity)

{

this.quantity = quantity;

}

}

class Library

{

private ArrayList<Book> books = new ArrayList<>();

public void addBook(Book book)

{

books.add(book);

}

public void displayBooks()

{

if (books.isEmpty())

{

System.out.println("No books available in the library.");

return;

}

System.out.println("Available Books:");

for (Book book : books) {

System.out.println("Title: " + book.getTitle() + ", Author: " + book.getAuthor() + ", Quantity: " + book.getQuantity());

}

}

public Book findBook(String title)

{

for (Book book : books)

{

if (book.getTitle().equalsIgnoreCase(title))

{

return book;

}

}

return null;

}

public boolean issueBook(String title)

{

Book book = findBook(title);

if (book != null && book.getQuantity() > 0)

{

book.setQuantity(book.getQuantity() - 1);

return true;

}

return false;

}

public void returnBook(String title)

{

Book book = findBook(title);

if (book != null)

{

book.setQuantity(book.getQuantity() + 1);

System.out.println("Book returned successfully.");

} else {

System.out.println("Book not found.");

}

}

}

public class Main

{

public static void main(String[] args)

{

Library library = new Library();

Scanner scanner = new Scanner(System.in);

int choice;

do {

System.out.println("\nLibrary Management System");

System.out.println("1. Add Book");

System.out.println("2. Display Available Books");

System.out.println("3. Issue Book");

System.out.println("4. Return Book");

System.out.println("5. Exit");

System.out.print("Enter your choice: ");

choice = scanner.nextInt();

scanner.nextLine();

switch (choice) {

case 1:

System.out.print("Enter book title: ");

String title = scanner.nextLine();

System.out.print("Enter author name: ");

String author = scanner.nextLine();

System.out.print("Enter quantity: ");

int quantity = scanner.nextInt();

scanner.nextLine();

library.addBook(new Book(title, author, quantity));

System.out.println("Book added successfully.");

break;

case 2:

library.displayBooks();

break;

case 3:

System.out.print("Enter book title to issue: ");

String issueTitle = scanner.nextLine();

if (library.issueBook(issueTitle)) {

System.out.println("Book issued successfully.");

} else {

System.out.println("Book not available.");

}

break;

case 4:

System.out.print("Enter book title to return: ");

String returnTitle = scanner.nextLine();

library.returnBook(returnTitle);

break;

case 5:

System.out.println("Exiting...");

break;

default:

System.out.println("Invalid choice. Please try again.");

}

} while (choice != 5);

scanner.close();

}

}

**OUTPUT:**

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 1

Enter book title: DSA

Enter author name: Koustubh

Enter quantity: 980

Book added successfully.

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 1

Enter book title: Compiler design

Enter author name: Gopal

Enter quantity: 780

Book added successfully.

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 2

Available Books:

Title: DSA, Author: Koustubh, Quantity: 980

Title: Compiler design, Author: Gopal, Quantity: 780

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 3

Enter book title to issue: DSA

Book issued successfully.

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 4

Enter book title to return: DSA

Book returned successfully.

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 5

Exiting...