import java.util.ArrayList;

import java.util.Scanner;

class Book {

private String title, 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;

}

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\n2. Display Available Books\n3. Issue Book\n4. Return Book\n5. 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: Maths

Enter author name: CV Raman

Enter quantity: 211

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: Electrical Engine

Enter author name: N. Tesla

Enter quantity: 169

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

Title: Maths, Author: CV Raman, Quantity: 211

Title: Electrical Engine, Author: N. Tesla, Quantity: 169

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: Maths

Book issued successfully.

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 2

Title: Maths, Author: CV Raman, Quantity: 210

Title: Electrical Engine, Author: N. Tesla, Quantity: 169

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: Maths

Book returned successfully.

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 2

Title: Maths, Author: CV Raman, Quantity: 211

Title: Electrical Engine, Author: N. Tesla, Quantity: 169

Library Management System

1. Add Book

2. Display Available Books

3. Issue Book

4. Return Book

5. Exit

Enter your choice: 5

Exiting...

=== Code Execution Successful ===