**Exercise 6: Library Management System**

import java.util.\*;  
  
public class LibraryManagementSystem {  
  
 static class Book {  
 int bookId;  
 String title;  
 String author;  
  
 public Book(int bookId, String title, String author) {  
 this.bookId = bookId;  
 this.title = title;  
 this.author = author;  
 }  
  
 public void display() {  
 System.*out*.println("ID: " + bookId + ", Title: " + title + ", Author: " + author);  
 }  
 }  
  
 public static Book linearSearch(Book[] books, String targetTitle) {  
 for (Book b : books) {  
 if (b.title.equalsIgnoreCase(targetTitle)) {  
 return b;  
 }  
 }  
 return null;  
 }  
  
 public static Book binarySearch(Book[] books, String targetTitle) {  
 int low = 0, high = books.length - 1;  
 while (low <= high) {  
 int mid = (low + high) / 2;  
 int compare = books[mid].title.compareToIgnoreCase(targetTitle);  
 if (compare == 0) return books[mid];  
 else if (compare < 0) low = mid + 1;  
 else high = mid - 1;  
 }  
 return null;  
 }  
  
 public static void main(String[] args) {  
 Book[] books = {  
 new Book(1, "Data Structures", "Narasimha Karumanchi"),  
 new Book(2, "Clean Code", "Robert Martin"),  
 new Book(3, "Java Programming", "Balagurusamy"),  
 new Book(4, "Effective Java", "Joshua Bloch"),  
 new Book(5, "Head First Java", "Kathy Sierra")  
 };  
  
 System.*out*.println("Linear Search for 'Clean Code':");  
 Book found1 = *linearSearch*(books, "Clean Code");  
 if (found1 != null) found1.display();  
 else System.*out*.println("Book not found");  
  
 Arrays.*sort*(books, Comparator.*comparing*(b -> b.title.toLowerCase()));  
  
 System.*out*.println("\nBinary Search for 'Java Programming':");  
 Book found2 = *binarySearch*(books, "Java Programming");  
 if (found2 != null) found2.display();  
 else System.*out*.println("Book not found");  
 }  
}

OUTPUT:

A screen shot of a computer

AI-generated content may be incorrect.