

Library

1. Code

- Book class

```
package LibraryCatalog;

import java.util.Scanner;

public class Book {
    Scanner scnr = new Scanner(System.in);
    private String title;
    private String author;
    private int id;
    private boolean isAvailable = true;
    public void SetTitle(){
        System.out.print("Enter the title: ");
        String title = scnr.next();
        this.title = title;
    }
    public void SetAuthor(){
        System.out.print("Enter the author: ");
        String author = scnr.next();
        this.author = author;
    }
    public void SetId(){
        System.out.print("Enter the id: ");
        int id = scnr.nextInt();
        this.id = id;
    }
    public String GetTitle(){
        return this.title;
    }
    public String GetAuthor(){
        return this.author;
    }
    public int GetId(){
        return this.id;
    }
    public boolean CheckAvailable(){
        return this.isAvailable;
    }
    public void SetBorrowStatus(){
        this.isAvailable = false;
    }
    public void SetReturnStatus(){
        this.isAvailable = true;
    }
}
```

- Library class

```
• package LibraryCatalog;

import java.util.ArrayList;
import java.util.List;
import java.util.Scanner;

public class Library {
    Scanner scnr = new Scanner(System.in);
    private List<Book> catalogBook = new ArrayList<>();
    public void AddBook() {
        Book newBook = new Book();
        newBook.SetTitle();
        newBook.SetAuthor();
        newBook.SetId();
        catalogBook.add(newBook);
        System.out.println("Add successfully!");
    }
    public void DisplayBook() {
        System.out.println("Available book in the Library:");
        for (Book item : catalogBook) {
            if (item.CheckAvailable()) {
                System.out.printf("Book ID: %d, Title: %s, Author: %s\n", item.GetId(), item.GetTitle(), item.GetAuthor());
            }
        }
    }
    public boolean CheckBorrowBook(int id) {
        for (Book item : catalogBook) {
            if (item.GetId() == id) {
                item.SetBorrowStatus();
                return true;
            }
        }
        return false;
    }
    public void BorrowBook() {
        System.out.print("Enter the book ID to borrow: ");
        int borrowBook = scnr.nextInt();
        if (CheckBorrowBook(borrowBook)) {
            System.out.printf("The book with ID %d has been borrowed\n", borrowBook);
        }
        else {
            System.out.println("Your book need to borrow is not exist!");
        }
    }
    public boolean CheckReturnBook(int id) {
        for (Book item : catalogBook) {
            if (item.GetId() == id && item.CheckAvailable() == false) {
                item.SetReturnStatus();
                return true;
            }
        }
        return false;
    }
}
```

```

    }
    public void ReturnBook() {
        System.out.print("Enter the book ID to return: ");
        int returnBook = scnr.nextInt();
        if (CheckReturnBook(returnBook)) {
            System.out.printf("The book with ID %d has been
returned\n", returnBook);
        }
        else{
            System.out.println("Your book you return may wrong!");
        }
    }
}
}

```

- Main class

```

• package LibraryCatalog;

import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner scnr = new Scanner(System.in);

        Library list = new Library();
        int choice;
        do {
            System.out.println("==== Library Catalog System =====");
            System.out.println("1. Add Book");
            System.out.println("2. Display Book");
            System.out.println("3. Borrow Book");
            System.out.println("4. Return Book");
            System.out.println("5. Exit");
            System.out.print("Enter your choice: ");
            choice = scnr.nextInt();
            switch (choice){
                case 1:
                    list.AddBook();
                    break;
                case 2:
                    list.DisplayBook();
                    break;
                case 3:
                    list.BorrowBook();
                    break;
                case 4:
                    list.ReturnBook();
                    break;
                case 5:
                    System.out.printf("Thank for using!");
                    break;
                default:
                    System.out.println("Your choice may wrong! Please

```

```
check again!");  
                break;  
            }  
        }while (choice != 5);  
    }  
}
```