

Use a HashSet to manage the unique genres available in the library. Ensure that new genres can be added without duplicating existing genres

```
J LibraryManagement.java > ...
1  import java.util.ArrayList;
2  import java.util.HashSet;
3  import java.util.Scanner;
4
5  class Book {
6      private String title;
7      private String author;
8      private String isbn;
9      private double price;
10     private String genre;
11
12     public Book(String title, String author, String isbn, double price, String genre) {
13         this.title = title;
14         this.author = author;
15         this.isbn = isbn;
16         this.price = price;
17         this.genre = genre;
18     }
19
20     public String getTitle() {
21         return title;
22     }
23
24     public String getAuthor() {
25         return author;
26     }
27
28     public String getIsbn() {
29         return isbn;
30     }
31
32     public double getPrice() {
33         return price;
34     }
35
36     public String getGenre() {
37         return genre;
38     }
39
40     @Override
41     public String toString() {
42         return "Title: " + title + ", Author: " + author + ", ISBN: " + isbn
43             + ", Price: $" + price + ", Genre: " + genre;
44     }
45 }
46
47 public class LibraryManagement {
```

```
48 private ArrayList<Book> books;
49 private HashSet<String> genres;
50
51 public LibraryManagement() {
52     books = new ArrayList<>();
53     genres = new HashSet<>();
54 }
55
56 public void addBook(Book book) {
57     books.add(book);
58     genres.add(book.getGenre());
59     System.out.println("Book added: " + book);
60 }
61
62 public void removeBook(String isbn) {
63     Book bookToRemove = null;
64     for (Book book : books) {
65         if (book.getIsbn().equals(isbn)) {
66             bookToRemove = book;
67             break;
68         }
69     }
70     if (bookToRemove != null) {
71         books.remove(bookToRemove);
72         System.out.println("Book removed: " + bookToRemove);
73     } else {
74         System.out.println("Book with ISBN " + isbn + " not found.");
75     }
76 }
77
78 public void displayBooks() {
79     if (books.isEmpty()) {
80         System.out.println(x:"No books in the library.");
81     } else {
82         System.out.println(x:"Books in the library:");
83         for (Book book : books) {
84             System.out.println(book);
85         }
86     }
87 }
88
89 public void addGenre(String genre) {
90     if (genres.add(genre)) {
91         System.out.println("Genre added: " + genre);
92     } else {
93         System.out.println("Genre already exists: " + genre);
94     }
95 }
```

```

95     }
96
97     public void displayGenres() {
98         if (genres.isEmpty()) {
99             System.out.println(x:"No genres in the library.");
100         } else {
101             System.out.println(x:"Genres in the library:");
102             for (String genre : genres) {
103                 System.out.println(genre);
104             }
105         }
106     }
107
108     Run | Debug
109     public static void main(String[] args) {
110         LibraryManagement library = new LibraryManagement();
111         Scanner scanner = new Scanner(System.in);
112
113         while (true) {
114             System.out.println(x:"Library Menu:");
115             System.out.println(x:"1. Add Book");
116             System.out.println(x:"2. Remove Book");
117             System.out.println(x:"3. Display Books");
118             System.out.println(x:"4. Add Genre");
119             System.out.println(x:"5. Display Genres");
120             System.out.println(x:"6. Exit");
121             System.out.print(s:"Choose an option: ");
122             int choice = scanner.nextInt();
123             scanner.nextLine(); // Consume newline
124
125             switch (choice) {
126                 case 1:
127                     System.out.print(s:"Enter title: ");
128                     String title = scanner.nextLine();
129                     System.out.print(s:"Enter author: ");
130                     String author = scanner.nextLine();
131                     System.out.print(s:"Enter ISBN: ");
132                     String isbn = scanner.nextLine();
133                     System.out.print(s:"Enter price: ");
134                     double price = scanner.nextDouble();
135                     scanner.nextLine(); // Consume newline
136                     System.out.print(s:"Enter genre: ");
137                     String genre = scanner.nextLine();
138                     Book book = new Book(title, author, isbn, price, genre);
139                     library.addBook(book);
140                     break;

```

```

140         case 2:
141             System.out.print(s:"Enter ISBN of the book to remove: ");
142             String isbnToRemove = scanner.nextLine();
143             library.removeBook(isbnToRemove);
144             break;
145         case 3:
146             library.displayBooks();
147             break;
148         case 4:
149             System.out.print(s:"Enter genre to add: ");
150             String newGenre = scanner.nextLine();
151             library.addGenre(newGenre);
152             break;
153         case 5:
154             library.displayGenres();
155             break;
156         case 6:
157             System.out.println(x:"Exiting...");
158             scanner.close();
159             return;
160         default:
161             System.out.println(x:"Invalid choice. Please try again.")
162     }
163 }
164 }
165 }

```

PROBLEMS ① OUTPUT DEBUG CONSOLE **TERMINAL** PORTS

```

PS C:\Users\SWETHA BENNY\Documents\javaProject> javac LibraryManagement.java
>> java LibraryManagement
>>
Library Menu:
1. Add Book
2. Remove Book
3. Display Books
4. Add Genre
5. Display Genres
6. Exit
Choose an option: 2
Enter ISBN of the book to remove: SBN 6756897678
Book with ISBN SBN 6756897678 not found.
Library Menu:
1. Add Book
2. Remove Book
3. Display Books
4. Add Genre
5. Display Genres
6. Exit

```

```
Rom-com
Fiction
Library Menu:
1. Add Book
2. Remove Book
3. Display Books
4. Add Genre
5. Display Genres
6. Exit
Choose an option: 6
Exiting...
```