INLOOP Softwaretechnologie, Collections II (Library with Set)

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Datei `Book.java`

```java
package collections2;

public class Book implements Comparable<Book> {
  private String isbn;
  private String author;
  private String title;

  public Book(String isbn, String author, String title) {
    this.isbn = isbn;
    this.author = author;
    this.title = title;
  }

  public Book(String isbn) {
    this.isbn = isbn;
    this.author = "";
    this.title = "";
  }

  public String getIsbn() {
    return this.isbn;
  }

  public String getAuthor() {
    return this.author;
  }

  public String getTitle() {
    return this.title;
  }

  public String toString() {
    return this.title + " by " + this.author + " (ISBN " + this.isbn + ")";
  }

  // Vergleich der Buecher = Vergleich der ISBNs
  public int compareTo(Book b) {
```

```
38      return this.isbn.compareTo(b.getIsbn());
39    }
40
41    public boolean equals(Object o) {
42      // wenn o kein Buch ist, wird direkt false zurueckgegeben
43      if (o instanceof Book) {
44        Book book = (Book) o;
45        // Vergleich der ISBNs
46        return this.isbn.equals(book.getIsbn());
47      }
48      return false;
49    }
50
51    // HashCode des Buches = HashCode der ISBN
52    public int hashCode() {
53      return this.isbn.hashCode();
54    }
55  }
```

Datei Library.java

```
1   package collections2;
2
3   import java.util.*;
4
5   public class Library {
6     private Set<Book> stock;
7
8     public Library() {
9       this.stock = new TreeSet<Book>();
10    }
11
12    public boolean insertBook(Book newBook) {
13      boolean result = stock.add(newBook);
14      return result;
15    }
16
17    public Book searchForIsbn(String isbn) {
18      for (Book b : stock) {
19        if (b.getIsbn().equals(isbn)) {
20          return b;
21        }
22      }
23      return null;
24    }
25
26    public Collection<Book> searchForAuthor(String author) {
27      // leere Menge, in die dann die gefundenen Buecher
28      // hinzugefuegt werden
29      SortedSet<Book> authorBooks = new TreeSet<Book>();
30      for (Book b : stock) {
31        if (b.getAuthor().equals(author)) {
```

```
32            authorBooks.add(b);
33          }
34        }
35        return authorBooks;
36      }
37
38      public Collection<Book> getStock() {
39        return this.stock;
40      }
41  }
```