



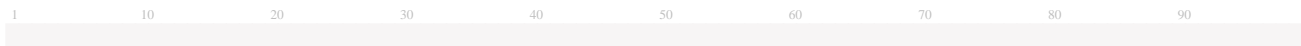
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```
package library;
```

```
public interface Issuable {  
    boolean issue();  
    boolean returnBook();  
    boolean isAvailable();  
}
```

```
package library;
```

```
public class Book implements Issuable {  
    private String title;  
    private String author;  
    private String isbn;  
    private boolean issued;
```

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

```
    public String getTitle() {  
        return title;  
    }
```

```
    public String getAuthor() {
```

```
        return author;
    }
}
```

```
public String getIsbn() {
    return isbn;
}
```

```
@Override
public boolean issue() {
    if (!issued) {
        issued = true;
        return true;
    }
    return false;
}
```

```
@Override
public boolean returnBook() {
    if (issued) {
        issued = false;
        return true;
    }
    return false;
}
```

```
@Override
public boolean isAvailable() {
```

```
        return !issued;
    }
}

package library;

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

public class Library {
    private List<Book> books;

    public Library() {
        books = new ArrayList<>();
    }

    public void addBook(Book book) {
        books.add(book);
    }

    public Book findBookByIsbn(String isbn) {
        for (Book book : books) {
            if (book.getIsbn().equals(isbn)) {
                return book;
            }
        }
        return null;
    }
}
```

```
public boolean issueBook(String isbn) {  
    Book book = findBookByIsbn(isbn);  
    if (book != null) {  
        return book.issue();  
    }  
    return false;  
}
```

```
public boolean returnBook(String isbn) {  
    Book book = findBookByIsbn(isbn);  
    if (book != null) {  
        return book.returnBook();  
    }  
    return false;  
}
```

```
public boolean isAvailable(String isbn) {  
    Book book = findBookByIsbn(isbn);  
    return book != null && book.isAvailable();  
}  
}
```

```
package library;
```

```
import static org.junit.Assert.*;
```

```
import org.junit.Before;
```

```
import org.junit.Test;
```

```
public class LibraryTest {
```

```
    private Library library;
```

```
    private Book book1;
```

```
    @Before
```

```
    public void setUp() {
```

```
        library = new Library();
```

```
        book1 = new Book("The Silent Patient", "Alex Michaelides", "67890");
```

```
        library.addBook(book1);
```

```
    }
```

```
    @Test
```

```
    public void testIssueBook() {
```

```
        assertTrue(library.issueBook("67890"));
```

```
        assertFalse(library.isAvailable("67890"));
```

```
    }
```

```
    @Test
```

```
    public void testReturnBook() {
```

```
        library.issueBook("67890");
```

```
        assertTrue(library.returnBook("67890"));
```

```
        assertTrue(library.isAvailable("67890"));
```

```
    }
```

```
    @Test
```

```
public void testIsAvailable() {  
    assertTrue(library.isAvailable("67890"));  
}  
}
```