LIBRARY WEB SYSTEM

- Spring Boot Web Application
- Course Name: Web Programming
- Course Code: SEN3004
- Student Name: Atena Jafari Parsa

THE INDEX PAGE

JOURNEY THROUGH PAGES.

Welcome to the Library!
Borrow books, manage your account, and explore new titles!

Are you an admin or a user?
An admin can add new books, edit or delete the existing books besides viewing and searching among them.

A user can view the existing books, search for a specific book and borrow books for a limited time interval.

[I'M AN ADMIN.] [I'M A USER.]
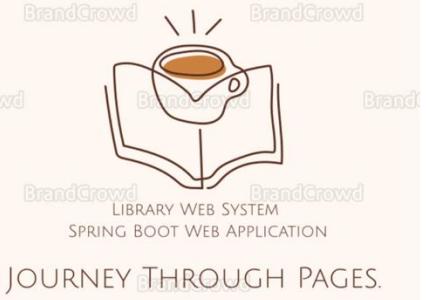
```html
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <title>Library Web System</title>
6      <link rel="stylesheet" th:href="@{style.css}">
7  </head>
8  <body>
9
10 <img class="background-image" src="/images/large.png" alt="Background Image">
11
12 <div class="container">
13     <h1>Welcome to the Library!</h1>
14     <p class="description">Borrow books, manage your account, and explore new titles!</p>
15 </div>
16
17 <div class="container">
18     <h1>Are you an admin or a user?</h1>
19     <p class="description">An admin can add new books, edit or delete the existing books besides viewing and searching among them.</p>
20
21     <p class="description">A user can view the existing books, search for a specific book and borrow books for a limited time interval.</p>
22     <button class="btn" id="adminButton"><i class="animation"></i>I'm an admin.<i class="animation"></i>
23     </button>
24
25     <button class="btn" id="userButton"><i class="animation"></i>I'm a user.<i class="animation"></i>
26         </button>
27 </div>
28
29 <script>
30     document.getElementById("adminButton").addEventListener("click", function() {
31         window.location.href = "/admin"; // Redirect to the admin page
32     });
33
34     document.getElementById("userButton").addEventListener("click", function() {
35         window.location.href = "/user"; // Redirect to the user page
36     });
37 </script>
38
39 </body>
40 </html>
```

HomeController.java:

```java
@GetMapping("/user")
public String userPage() {
    return "user"; //Redirects to user.html
}

@GetMapping("/admin")
public String adminPage() {
    return "admin"; //Redirects to admin.html
}
```

THE DATA BASE

1. application.properties:

```
1   spring.application.name=Library-Web-System
2
3   spring.h2.console.enabled=true
4
5   spring.datasource.url=jdbc:h2:mem:LibraryWebDatabase
6
7   spring.datasource.driverClassName=org.h2.Driver
8   spring.datasource.username=sa
9   spring.datasource.password=
10
11  spring.jpa.show-sql=true
12  spring.jpa.properties.hibernate.dialect=org.hibernate.dialect.H2Dial
13  spring.jpa.hibernate.ddl-auto=update |
```

Book.java

```java
16  @Entity
17  @Table(name = "tbl_books")
18  public class Book {
19
20     @Id
21     @GeneratedValue(strategy = GenerationType.IDENTITY)
22     private Long id;
23
24
25     private String title;
26     private String author;
27     private String isbn;    // Changed to String
28     private String genre;
29     private int publish_year;
30
31     @OneToMany(mappedBy = "book", cascade = CascadeType.ALL)
32     private List<Loan> loans;
33
34     @Column(name = "cover_image_url")
35     private String coverImageUrl;
36
37     // Getters and setters
```

English   Preferences Tools Help

Login

Saved Settings:	Generic H2 (Embedded)
Setting Name:	Generic H2 (Embedded) Save Remove

Driver Class:	org.h2.Driver
JDBC URL:	jdbc:h2:mem:LibraryWebDatabase
User Name:	sa
Password:	

Connect   Test Connection

Test successful

http://localhost:8080/h2-console

Schema.sql

Limit to 1000 rows

```sql
1   CREATE TABLE IF NOT EXISTS tbl_books (
2       id BIGINT AUTO_INCREMENT PRIMARY KEY,
3       title VARCHAR(255),
4       author VARCHAR(255),
5       isbn VARCHAR(255),
6       genre VARCHAR(255),
7       cover_image_url VARCHAR(255),
8       publish_year INTEGER
9   );
10
11  CREATE TABLE IF NOT EXISTS tbl_loans (
12      id BIGINT AUTO_INCREMENT PRIMARY KEY,
13      book_id BIGINT NOT NULL,
14      borrowed_date DATE NOT NULL,
15      due_date DATE NOT NULL,
16      FOREIGN KEY (book_id) REFERENCES tbl_books(id)
17  );
```

DATABASE SCHEMA DIAGRAM

jdbc:h2:mem:LibraryWebDataba | Run | Run Selected | Auto complete | Clear | SQL statement:

- ⊞ 📋 TBL_BOOKS
- ⊞ 📋 TBL_LOANS
- ⊞ 📁 INFORMATION_SCHEMA
- ⊞ 👥 Users
- ⓘ H2 2.2.224 (2023-09-17)

SELECT * FROM TBL_LOANS

SELECT * FROM TBL_LOANS;

ID	BOOK_ID	BORROWED_DATE	DUE_DATE
1	1	2024-05-01	2024-06-01
2	2	2024-05-10	2024-06-10

(2 rows, 4 ms)

jdbc:h2:mem:LibraryWebDataba | Run | Run Selected | Auto complete | Clear | SQL statement:

- ⊞ 📋 TBL_BOOKS
- ⊞ 📋 TBL_LOANS
- ⊞ 📁 INFORMATION_SCHEMA
- ⊞ 👥 Users
- ⓘ H2 2.2.224 (2023-09-17)

SELECT * FROM TBL_BOOKS

SELECT * FROM TBL_BOOKS;

ID	TITLE	AUTHOR	ISBN	GENRE	COVER_IMAGE_URL	PUBLISH_YEAR
1	A Court of Mist and Fury	Sarah J. Maas	1526617161	Fantasy	https://covers.openlibrary.org/b/id/14624404-L.jpg	2020
2	Introduction to Literature	Dr Craig Edwards	9781323421895	Textbook	https://covers.openlibrary.org/b/id/14556589-L.jpg	2016
3	Ignite Me	Tahereh Mafi	0062085573	Science Fiction	https://covers.openlibrary.org/b/id/7272906-L.jpg	2014
4	Twisted Games	Ana Huang	9781087886657	Contemporary Romance	https://covers.openlibrary.org/b/id/12821465-L.jpg	2021
5	Esperanza (Spirit of the West, #3)	Kathleen Duey	0525468595	Fiction	https://covers.openlibrary.org/b/id/361309-L.jpg	2002
6	Economics of Regulation and Antitrust	W. Kip Viscusi	026222075X	Economics	https://covers.openlibrary.org/b/id/150858-L.jpg	2005
7	Marc Camille Chaimowicz: Celebration?: Relife.	Tom Holert	1846380294	Performance Art	https://covers.openlibrary.org/b/id/12661338-L.jpg	2007
8	The History of Cinema	Geoffrey Nowell-Smith	0198701772	History	https://covers.openlibrary.org/b/id/8832350-L.jpg	2018
9	Taking Flight	Sheena Wilkinson	9781554553280	Childrens Fiction	https://covers.openlibrary.org/b/id/10811849-L.jpg	2010
10	Learning Spring Boot 3.0	Greg L. Turnquist	978-1803233307	Textbook	https://m.media-amazon.com/images/I/61t3Z9ty8sL._AC_UF1000,1000_QL80_.jpg	2014
11	HTML5 and CSS3, Illustrated Complete (Second Ed.)	Sasha Vondik	978-1305394049	Textbook	https://m.media-amazon.com/images/I/81hh-ywlN4L._AC_UF1000,1000_QL80_.jpg	2011

(11 rows, 4 ms)

THE ADMIN PAGE

Welcome to the Admin Page!

Here you can add a new book, edit and delete the existing books.
Search for a book by its title, or scroll down to view all books.

Search book by title

ADD A NEW BOOK

BACK TO THE MAIN PAGE

Add a New Book to the Library

Please fill in the form below with the information of the book you would like to add.

Enter the title of the book

Enter the author name

Enter the ISBN

Enter the genre

Enter the cover image URL

Enter the year the book was published

Submit

Edit Book

Edit the details of the book below and click Submit to save changes.

A Court of Mist and Fury

Sarah J. Maas

1526617161

Fantasy

https://covers.openlibrary.org/b/id/14624404-L.jpg

Enter the published year   Submit

All Available Books:

Title: A Court of Mist and Fury
Author: Sarah J. Maas
ISBN: 1526617161
Genre: Fantasy
Publish Year: 2020

Edit   Delete

Title: Introduction to Literature
Author: Dr Craig Edwards
ISBN:

Edit   Delete

```java
@Service
public class BookService {

    @Autowired
    private BookRepository bookRepository;

    public List<Book> getAllBooks() {
        return bookRepository.findAll();
    }

    public Book getBookById(Long id) {
        return bookRepository.findById(id).orElse(null);
    }

    public Book saveBook(Book book) {
        return bookRepository.save(book);
    }

    public void deleteBook(Long id) {
        bookRepository.deleteById(id);
    }

    public List<Book> searchBooksByTitle(String title) {
        return bookRepository.findByTitleContainingIgnoreCase(title);
    }
}
```

```java
@RestController
@RequestMapping("/api/books")
public class BookController {

    @Autowired
    private BookService bookService;

    @GetMapping
    public List<Book> getAllBooks() {
        return bookService.getAllBooks();
    }

    @GetMapping("/{id}")
    public Book getBookById(@PathVariable Long id) {
        return bookService.getBookById(id);
    }

    @PostMapping("/add")
    public ResponseEntity<Book> createBook(@RequestBody Book book) {
        Book savedBook = bookService.saveBook(book);
        if (savedBook != null) {
            return ResponseEntity.ok(savedBook);
        } else {
            return ResponseEntity.status(HttpStatus.INTERNAL_SERVER_ERROR).build();
        }
    }

    @PutMapping("/edit/{id}")
    public Book updateBook(@PathVariable Long id, @RequestBody Book book) {
        book.setId(id);
        return bookService.saveBook(book);
    }

    @DeleteMapping("/delete/{id}")
    public void deleteBook(@PathVariable Long id) {
        bookService.deleteBook(id);
    }

    @GetMapping("/search")
    public List<Book> searchBooks(@RequestParam String title) {
        return bookService.searchBooksByTitle(title);
    }
}
```
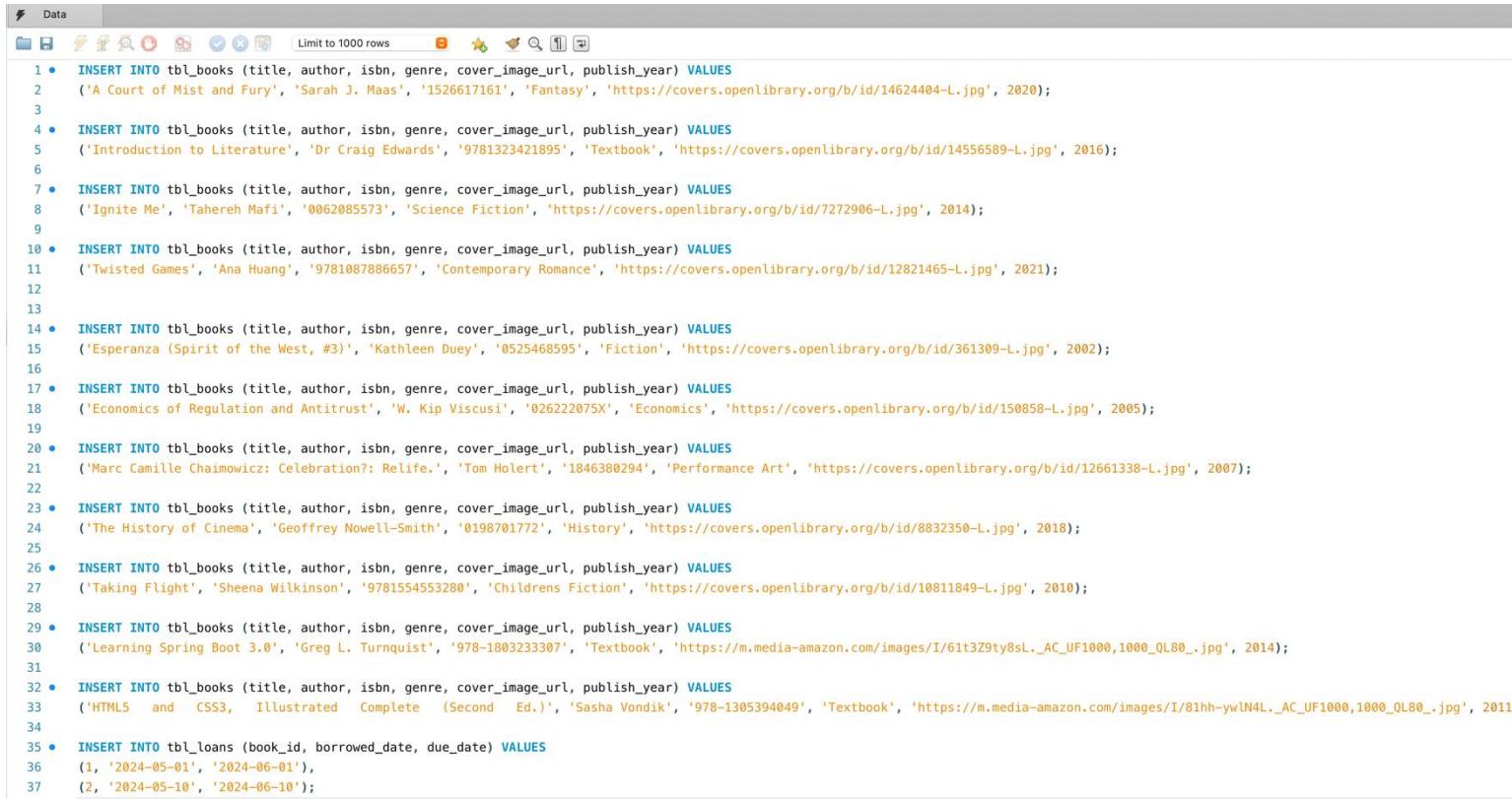
CRUD OPERATIONS ON THE DATABASE

SAMPLE DATA

Data.sql:

```sql
INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('A Court of Mist and Fury', 'Sarah J. Maas', '1526617161', 'Fantasy', 'https://covers.openlibrary.org/b/id/14624404-L.jpg', 2020);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Introduction to Literature', 'Dr Craig Edwards', '9781323421895', 'Textbook', 'https://covers.openlibrary.org/b/id/14556589-L.jpg', 2016);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Ignite Me', 'Tahereh Mafi', '0062085573', 'Science Fiction', 'https://covers.openlibrary.org/b/id/7272906-L.jpg', 2014);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Twisted Games', 'Ana Huang', '9781087886657', 'Contemporary Romance', 'https://covers.openlibrary.org/b/id/12821465-L.jpg', 2021);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Esperanza (Spirit of the West, #3)', 'Kathleen Duey', '0525468595', 'Fiction', 'https://covers.openlibrary.org/b/id/361309-L.jpg', 2002);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Economics of Regulation and Antitrust', 'W. Kip Viscusi', '026222075X', 'Economics', 'https://covers.openlibrary.org/b/id/150858-L.jpg', 2005);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Marc Camille Chaimowicz: Celebration?: Relife.', 'Tom Holert', '1846380294', 'Performance Art', 'https://covers.openlibrary.org/b/id/12661338-L.jpg', 2007);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('The History of Cinema', 'Geoffrey Nowell-Smith', '0198701772', 'History', 'https://covers.openlibrary.org/b/id/8832350-L.jpg', 2018);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Taking Flight', 'Sheena Wilkinson', '9781554553280', 'Childrens Fiction', 'https://covers.openlibrary.org/b/id/10811849-L.jpg', 2010);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('Learning Spring Boot 3.0', 'Greg L. Turnquist', '978-1803233307', 'Textbook', 'https://m.media-amazon.com/images/I/61t3Z9ty8sL._AC_UF1000,1000_QL80_.jpg', 2014);

INSERT INTO tbl_books (title, author, isbn, genre, cover_image_url, publish_year) VALUES
('HTML5  and  CSS3,  Illustrated  Complete  (Second  Ed.)', 'Sasha Vondik', '978-1305394049', 'Textbook', 'https://m.media-amazon.com/images/I/81hh-ywlN4L._AC_UF1000,1000_QL80_.jpg', 2011);

INSERT INTO tbl_loans (book_id, borrowed_date, due_date) VALUES
(1, '2024-05-01', '2024-06-01'),
(2, '2024-05-10', '2024-06-10');
```