

Advanced Oop Project Topic:Book Management System

PRESENTED BY:

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Introduction

This project is a web-based book management system developed using Java Servlets and MySQL database. The system allows users to add, edit, delete, view, and search books. It also includes user authentication.

Foster Books

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Image ID: KERGRI
www.alamy.com

Database Details

- Database Name: book_system
- Table: books
- Fields:
 - id (int, primary key)
 - title (varchar)
 - author (varchar)
 - genre (varchar)
 - image_path (varchar)
- User authentication data stored in a separate table.

Query 1 x

The screenshot shows a MySQL Workbench interface with a query editor titled "Query 1". The code in the editor is as follows:

```
1 • CREATE DATABASE book_system;
2 • USE book_system;
3
4 • CREATE TABLE users (
5     id INT AUTO_INCREMENT PRIMARY KEY,
6     username VARCHAR(255) NOT NULL UNIQUE,
7     password VARCHAR(255) NOT NULL
8 );
9
10
11
12 • select *from users;
13
14 • CREATE TABLE books (
15     id INT AUTO_INCREMENT PRIMARY KEY,
16     title VARCHAR(255) NOT NULL,
17     author VARCHAR(255) NOT NULL,
18     genre VARCHAR(100) NOT NULL
19 );
20 • select *from books;
21 • ALTER TABLE books ADD COLUMN image_path VARCHAR(255)
22
```

The code creates a database named "book_system", selects it, and then creates two tables: "users" and "books". The "users" table has columns for id (auto-increment, primary key), username (unique), and password. The "books" table has columns for id (auto-increment, primary key), title, author, and genre. Finally, it adds a column "image_path" to the "books" table.

Authentication in the Book Management System

- Ensures that only authorized users can access the system.
- Protects sensitive information such as book data, user details, and administrative functions.
- Provides different levels of access for users (e.g., Admin, Regular Users).

Example Login Workflow

- **Login Form:** The user enters their credentials on a login page.
- **Validation:** The backend validates the credentials against the database.
- **Access Granted:** Upon successful authentication, the user is redirected to the dashboard or home page.
- **Access Denied:** If authentication fails, the user is shown an error message and prompted to retry.

User Login

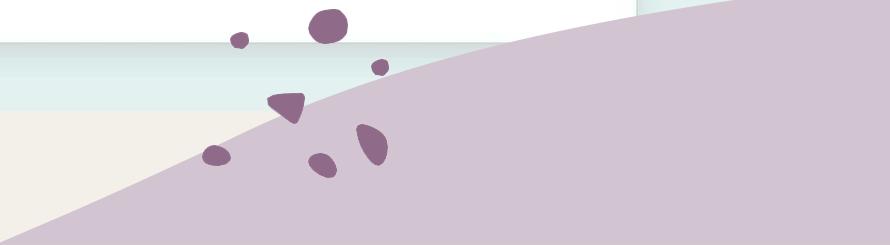
Username

Password

 (

Login

Don't have an account? [Register here](#)



Add Servlet

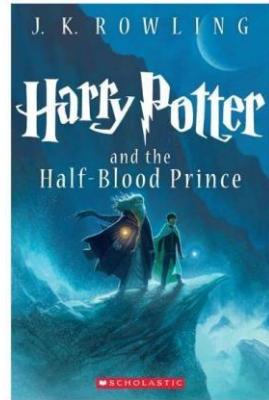
Functionality:

- Allows users to add new books to the database by submitting a form with details like title, author, genre, and image.
- Captures input data from the form and inserts it into the books table using an SQL INSERT statement.
- Redirects the user to a confirmation page or displays a success message upon successful addition.

Key Features:

- Form validation to ensure required fields are filled.
- Uses JDBC to insert data into the database securely.
- Error handling to manage invalid input or database connection issues.

Book added successfully!



[Go to Homepage](#) [Add Another Book](#)

Add a New Book

Book Title

Harry Porter

Author

J.K.Rowling

Genre

fantasy literature

Book Image

Choose File

Add Book

Edit Servlet

Functionality:

- Enables users to update the details of an existing book by fetching the current details and displaying them in a form for editing.
- Processes the updated data and applies changes to the database using an SQL UPDATE query.
- Redirects the user back to the list of books with the updated information displayed.

Key Features:

- Pre-fills form fields with existing data for user convenience.
- Implements JDBC for secure database updates.
- Validates input and handles errors, such as invalid IDs or connection failures.

Edit Book

Title:

Harry Porter

Author:

J.K.Rowling

Genre:

Fantasy Literature-Children

Update

Go Back

Delete Servlet

Are you sure you want to delete the following book?

ID	3
Title	Peter Pan
Author	G.M. Barrie
Genre	Children

Delete

Cancel

Functionality:

- Provides the option to remove a book from the database using its unique ID.
- Executes an SQL DELETE query to remove the selected record.
- Redirects the user to the updated book list or confirms deletion success.

Key Features:

- Confirmation prompts to avoid accidental deletion.
- Utilizes JDBC for secure and efficient deletion of records.
- Handles errors gracefully, such as invalid IDs or database access issues.

ViewServlet

- **Functionality:**

- Displays all books stored in the database.
- Provides options to edit or delete individual books.
- Dynamically displays book images if available.

- **Key Features:**

- Bootstrap-styled table for displaying data.
- Navigation options for ease of use.

All Books					
ID	Title	Author	Genre	Image	Actions
3	Peter Pan	G.M. Barrie	Children		Edit Delete
4	Harry Porter	J.K.Rowling	fantasy literature		Edit Delete

[Go to Homepage](#) [Add Book](#)

SearchServlet

- Functionality:
 - Allows users to search for books by title, author, or genre.
 - Uses SQL queries with LIKE operator for partial matching.
 - Displays results dynamically with Bootstrap styling.

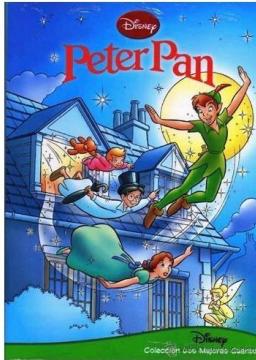
- Key Features:
 - Database connection using JDBC.
 - Error handling for database access issues.

Search Results

Peter Pan

Author: G.M. Barrie

Genre: Children



The image shows the front cover of the book "Peter Pan" by Disney. The cover features a colorful illustration of Peter Pan flying over a house with children. The title "Peter Pan" is written in large, stylized letters at the top. The Disney logo is visible in the top right corner. The bottom of the cover includes the text "Collection Los Mejores Clásicos".

Search by Title, Author, or Genre

M.Barrie |

Search

Code Highlights

- Utilizes Servlets for handling HTTP requests and responses.
- Modular database connection logic for reusability.
- HTML and CSS integrated with Bootstrap for responsive design.
- Dynamic handling of user input and database queries.

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

	id	title	author	genre	image_path
▶	3	Peter Pan	G.M. Barrie	Children	uploads/peter pan.jpg
	4	Harry Porter	J.K.Rowling	fantasy literature	uploads/harryporter.jpg
*	NULl	NULl	NULl	NULl	NULl

books 3 ×

