GALGOTIAS UNIVERSITY NAAC GRADE A+ Accredited University

# GALGOTIAS UNIVERSITY

# SCHOOL OF COMPUTER SCIENCE

## TITLE

## *Library Management System*

### SUBMITTED BY –

ABHIKARSH SINGH – 24SCSE1260005

PRIYANSHU – 24SCSE1260004

SHIVAM RATHI - 24SCSE1290029

### SUBMITTED TO –

Dr. JITENDRA TANWAR

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- Name of Student: Abhikarsh Singh

Enrollment Number: 24SCSE1260005

- Name of Student: Priyanshu

Enrollment Number: 24SCSE1260004

- Name of Student: Shivam Rathi

Enrollment Number: 24SCSE1290029

# Library Management System

A basic library management system can be built as a web app using HTML for structure, CSS for styling, and JavaScript for interactivity. This example includes features to add books, display them in a list, and search by title. It uses local storage for persistence. Below is a step-by-step guide with code snippets.

Step 1: Set Up HTML Structure

Step 2: Add CSS Styling

Step 3: Implement JavaScript Functionality

Step 4: Run and Test

# Step 1: Set Up HTML Structure

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Library Management System</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
  <div class="container">
    <h1>Library Management System</h1>

    <div class="form-section">
      <h2>Add a New Book</h2>
      <form id="bookForm">
        <input type="text" id="title" placeholder="Book Title" required>
        <input type="text" id="author" placeholder="Author" required>
        <input type="text" id="isbn" placeholder="ISBN" required>
        <button type="submit">Add Book</button>
      </form>
    </div>
```

```
        <div class="search-section">
            <h2>Search Books</h2>
            <input type="text" id="search" placeholder="Search by title or author">
        </div>

        <div class="book-list">
            <h2>Book List</h2>
            <ul id="bookList"></ul>
        </div>
    </div>

    <script src="script.js"></script>
</body>
</html>
```

## Step 2: Add CSS Styling

```
body {
   font-family: Arial, sans-serif;
   margin: 0;
   padding: 0;
   background-color: #f4f4f4;
   color: #333;
}

.container {
   max-width: 800px;
   margin: 20px auto;
   padding: 20px;
   background: white;
   border-radius: 8px;
   box-shadow: 0 0 10px rgba(0,0,0,0.1);
}

h1, h2 {
   text-align: center;
}

.form-section, .search-section, .book-list {
   margin-bottom: 20px;
}
```

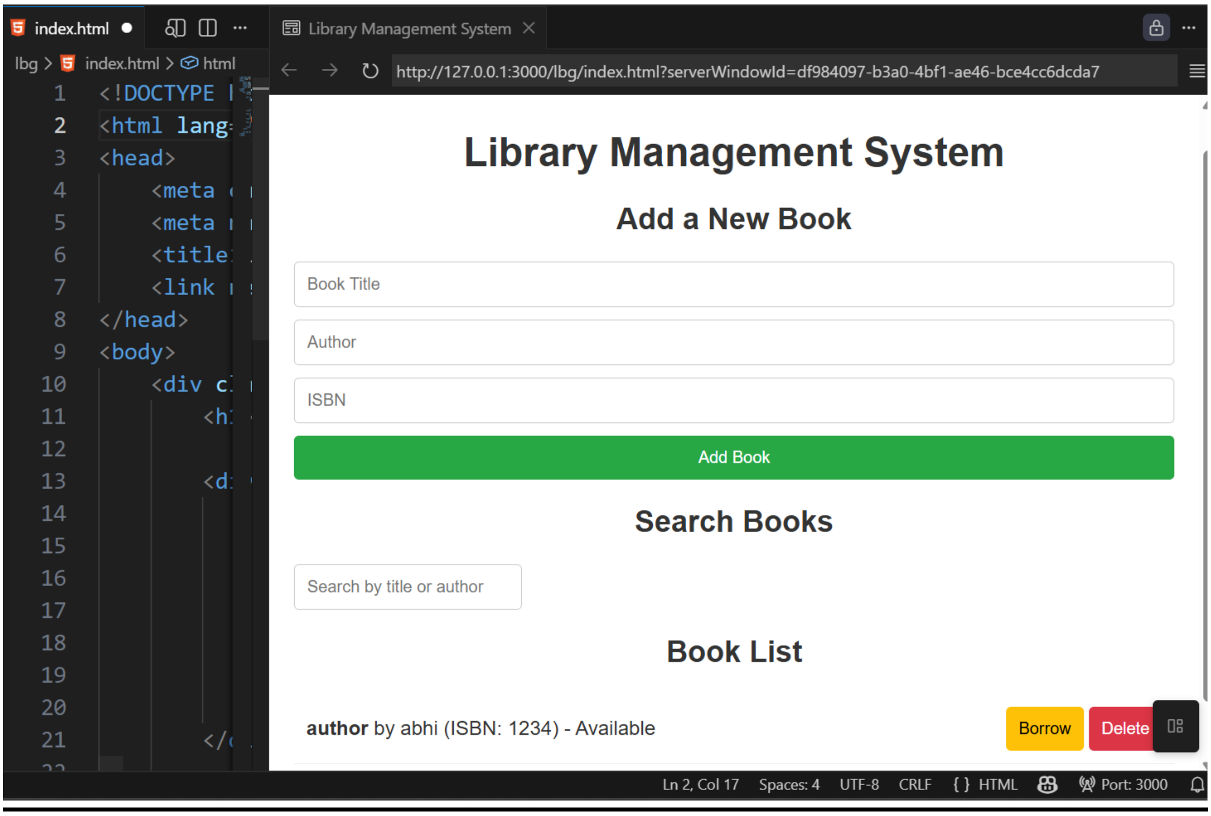
```
form {
    display: flex;
    flex-direction: column;
    gap: 10px;
}

input {
    padding: 10px;
    border: 1px solid #ccc;
    border-radius: 4px;
}

button {
    padding: 10px;
    background-color: #28a745;
    color: white;
    border: none;
    border-radius: 4px;
    cursor: pointer;
}

button:hover {
    background-color: #218838;
}
```

```css
ul {
    list-style: none;
    padding: 0;
}

li {
    padding: 10px;
    border-bottom: 1px solid #eee;
    display: flex;
    justify-content: space-between;
    align-items: center;
}

.borrowed {
    background-color: #ffeaa7;
}

button.delete {
    background-color: #dc3545;
}

button.delete:hover {
    background-color: #c82333;
}

button.borrow {
    background-color: #ffc107;
    color: black;
}

button.borrow:hover {
    background-color: #e0a800;
}
```

## Step 3: Implement JavaScript Functionality

```
document.addEventListener('DOMContentLoaded', () => {
    const bookForm = document.getElementById('bookForm');
    const bookList = document.getElementById('bookList');
    const searchInput = document.getElementById('search');

    let books = JSON.parse(localStorage.getItem('books')) || [];

    function saveBooks() {
        localStorage.setItem('books', JSON.stringify(books));
    }

    function renderBooks(filteredBooks = books) {
        bookList.innerHTML = '';
        filteredBooks.forEach((book, index) => {
            const li = document.createElement('li');
            li.className = book.borrowed ? 'borrowed' : '';
            li.innerHTML = `
                <div>
                    <strong>${book.title}</strong> by ${book.author} (ISBN: ${book.isbn})
                    <span>${book.borrowed ? ' - Borrowed' : ' - Available'}</span>
                </div>
                <div>
                    <button class="borrow" data-index="${index}">${book.borrowed ? 'Return' : 'Borrow'}</button>
                    <button class="delete" data-index="${index}">Delete</button>
                </div>
            `;
            bookList.appendChild(li);
        });
    }

    bookForm.addEventListener('submit', (e) => {
        e.preventDefault();
        const title = document.getElementById('title').value;
        const author = document.getElementById('author').value;
        const isbn = document.getElementById('isbn').value;

        books.push({ title, author, isbn, borrowed: false });
        saveBooks();
        renderBooks();
        bookForm.reset();
    });

    bookList.addEventListener('click', (e) => {
        const index = e.target.dataset.index;
        if (e.target.classList.contains('delete')) {
            books.splice(index, 1);
            saveBooks();
            renderBooks();
        } else if (e.target.classList.contains('borrow')) {
            books[index].borrowed = !books[index].borrowed;
            saveBooks();
            renderBooks();
        }
    });

    searchInput.addEventListener('input', () => {
        const query = searchInput.value.toLowerCase();
        const filtered = books.filter(book =>
            book.title.toLowerCase().includes(query) ||
            book.author.toLowerCase().includes(query)
        );
        renderBooks(filtered);
    });

    renderBooks();
});
```

# OUTPUT –



index.html
lbg > index.html > html
Library Management System
http://127.0.0.1:3000/lbg/index.html?serverWindowId=df984097-b3a0-4bf1-ae46-bce4cc6dcda7
Ln 2, Col 17
Spaces: 4
UTF-8
CRLF
{ } HTML
Port: 3000

```
<!DOCTYPE l
<html lang:
<head>
    <meta c
    <meta n
    <title:
    <link r
</head>
<body>
    <div c:
        <h:

        <d:








        </
```

## Library Management System

### Add a New Book

Book Title

Author

ISBN

Add Book

### Search Books

Search by title or author

### Book List

**author** by abhi (ISBN: 1234) - Available

Borrow Delete