

EXP 8: LIBRARY MANAGEMENT

Consider a Library Management System. Develop a JavaScript program that will validate the controls in the forms you have created for the application. State the assumptions you make (business logic you are taking into consideration). Note: Your application must access a database using Servlet/JSP.

AIM:

To develop a **JavaScript-based client-side validation module** for the **Library Management System** that ensures form inputs (e.g., book entry) are valid before submission to the server. The goal is to enhance user experience, reduce server load, and enforce basic data correctness prior to backend processing via JSP/Servlets and database.

ALGORITHM:

1. **Start**
2. User fills out a form (registration, book entry, or login)
3. On form submit, a JavaScript function is triggered
4. Inside the function:
 - Retrieve all input values using `document.getElementById()` or `form.elements`
 - Use conditional checks (e.g., `RegExp`, `.length`, `.match()`) to validate each field:
 - Check for empty fields
 - Use patterns for email, phone, ISBN
 - Validate number ranges for price
5. If any field is invalid:
 - Display an error message
 - Prevent form submission using `return false`
6. If all fields are valid:
 - Allow form submission (`return true`)
7. Servlet receives the valid form data for DB operations
8. **End**

SOURCE CODE:

AddBookServlet.java

```
1 package servlets;
2
3 import jakarta.servlet.*;
4 import jakarta.servlet.http.*;
5 import java.io.*;
6 import java.sql.*;
7
8 public class AddBookServlet extends HttpServlet {
9     protected void doPost(HttpServletRequest request, HttpServletResponse response)
10         throws ServletException, IOException {
11
12         String title = request.getParameter("title");
13         String isbn = request.getParameter("isbn");
14         String year = request.getParameter("year");
15
16         response.setContentType("text/html");
17         PrintWriter out = response.getWriter();
18
19         try {
20             Class.forName(className:"com.mysql.cj.jdbc.Driver");
21             Connection con = DriverManager.getConnection(
22                 url:"jdbc:mysql://localhost:3306/library_db", user:"root", password:"password");
23
24             PreparedStatement ps = con.prepareStatement(
25                 sql:"INSERT INTO books (title, isbn, year) VALUES (?, ?, ?)");
26             ps.setString(parameterIndex:1, title);
27             ps.setString(parameterIndex:2, isbn);
28             ps.setInt(parameterIndex:3, Integer.parseInt(year));
29             ps.executeUpdate();
30
31             out.println(x:"<h2>Book added successfully!</h2>");
32             con.close();
33
34         } catch (Exception e) {
35             out.println("<h2>Error: " + e.getMessage() + "</h2>");
36         }
37     }
38 }
```

Preferences.html

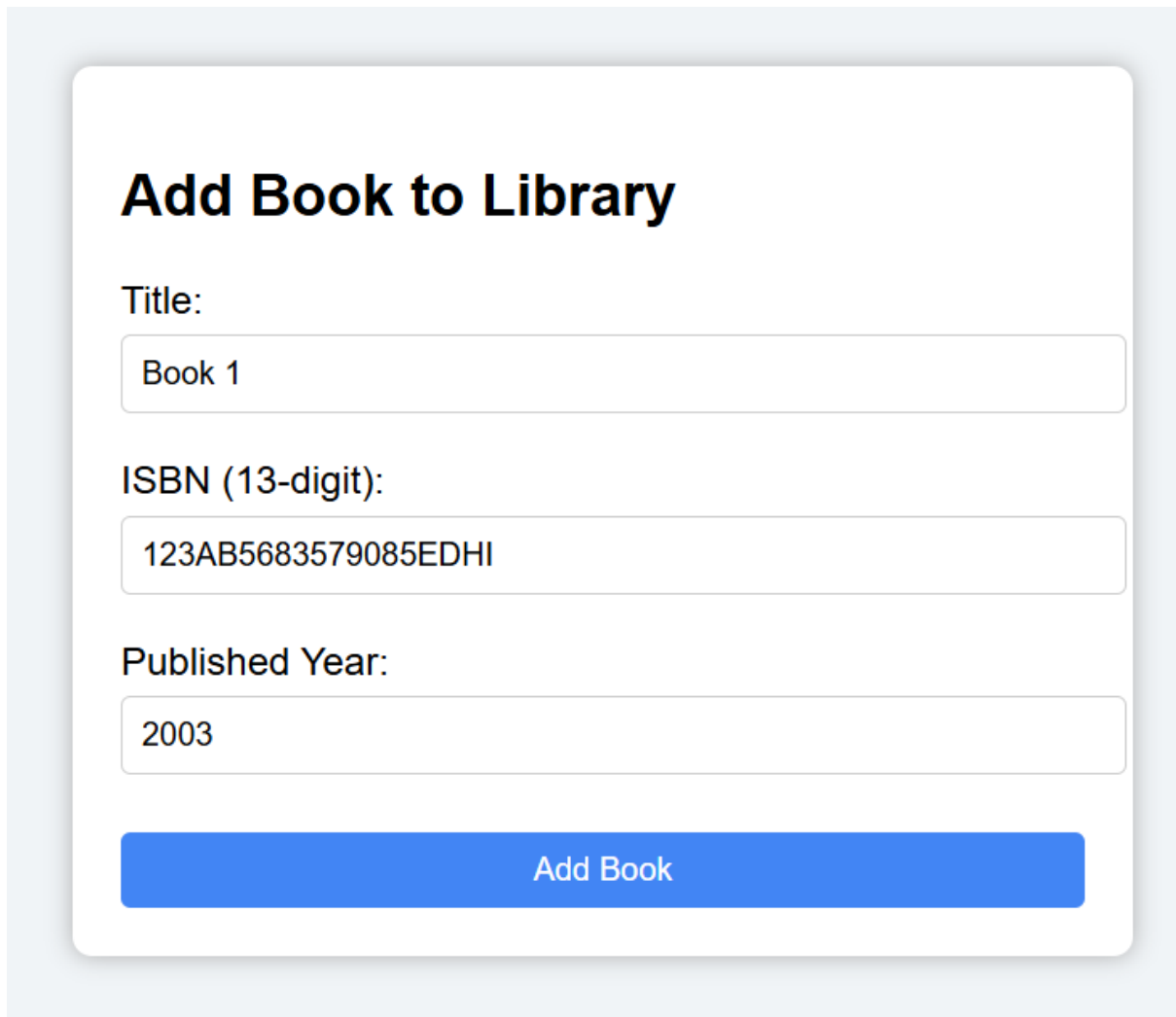
```
1  <!DOCTYPE html>
2  <html>
3  <head>
4      <title>Add Book</title>
5      <link rel="stylesheet" type="text/css" href="styles/style.css">
6      <script src="js/validate.js"></script>
7      <style>
8          |   body {
9              font-family: Arial, sans-serif;
10             background-color: #f0f4f7;
11         }
12
13         .container {
14             width: 400px;
15             margin: 50px auto;
16             background: white;
17             padding: 20px;
18             box-shadow: 0px 0px 10px #aaa;
19             border-radius: 8px;
20         }
21
22         input[type="text"], input[type="submit"] {
23             width: 100%;
24             padding: 8px;
25             margin-top: 5px;
26             border-radius: 4px;
27             border: 1px solid #ccc;
28         }
```

```
29
30     input[type="submit"] {
31         background-color: #4285f4;
32         color: white;
33         border: none;
34         cursor: pointer;
35     }
36
37     input[type="submit"]:hover {
38         background-color: #306fd0;
39     }
40
41 </style>
42 </head>
43 <body>
44     <div class="container">
45         <h2>Add Book to Library</h2>
46         <form name="bookForm" onsubmit="return validateBookForm()" method="post" action="AddBookServlet">
47             <label>Title:</label>
48             <input type="text" name="title" /><br><br>
49             <label>ISBN (13-digit):</label>
50             <input type="text" name="isbn" /><br><br>
51             <label>Published Year:</label>
52             <input type="text" name="year" /><br><br>
53             <input type="submit" value="Add Book" />
54         </form>
55     </div>
56 </body>
57 </html>
```

Web.xml

```
1  <web-app xmlns="http://jakarta.ee/xml/ns/jakartaee"
2      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
3      xsi:schemaLocation="http://jakarta.ee/xml/ns/jakartaee
4      http://jakarta.ee/xml/ns/jakartaee/web-app_5_0.xsd"
5      version="5.0">
6
7      <servlet>
8          <servlet-name>AddBookServlet</servlet-name>
9          <servlet-class>servlets.AddBookServlet</servlet-class>
10     </servlet>
11
12     <servlet-mapping>
13         <servlet-name>AddBookServlet</servlet-name>
14         <url-pattern>/AddBookServlet</url-pattern>
15     </servlet-mapping>
16
17 </web-app>
```

OUTPUT:



Add Book to Library

Title:

ISBN (13-digit):

Published Year:

Add Book

RESULT:

Thus, the program was executed successfully.