EX : 8 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 web-based Library Management System using HTML, CSS, JavaScript for frontend form validation and JSP/Servlet for backend processing. The application will validate form fields before submission and store data in a database.

ALGORITHM:

- Design a form to input book details.

- Use JavaScript to validate input fields:

  - Check for required values.
  - Validate formats.
  - Ensure correct number inputs.

- If validation passes, submit the form to a Java Servlet (`AddBookServlet`). •

The servlet inserts data into the MySQL database.

- Show a success/failure response to the user.

CODE:

```
<!DOCTYPE html>
<html <head>
 <meta charset="UTF-8">
 <title>Add Book | Library System</title>
 <style>
 body {
 font-family: 'Segoe UI', sans-serif;
 background: #e0f7fa;
 display: flex;
 justify-content: center;
 align-items: center;
 height: 100vh;
 }

 form {
 background: #ffffff;
 padding: 30px;
 border-radius: 15px;
 box-shadow: 0 0 10px rgba(0,0,0,0.2);
width: 350px;
 }

 h2 {
 text-align: center;
 color: #00796b;
 }

 label {
 margin-top: 10px;
 display: block;
 font-weight: 600;
 }

 input, select {
 width: 100%;
 padding: 8px;
 margin-top: 5px;
 border-radius: 8px;
 border: 1px solid #ccc;
 }
 button {
```

```
margin-top: 20px;
width: 100%;
padding: 10px;
border: none;
border-radius: 10px;
background-color: #00796b;
color: white;
font-size: 16px;
cursor: pointer;
}

button:hover {
background-color: #004d40;
}
</style>

<script>
function validateForm() {
const bookId = document.getElementById("bookId").value.trim();
const title = document.getElementById("title").value.trim();  const
author = document.getElementById("author").value.trim();  const
quantity = document.getElementById("quantity").value.trim();

if (!/^[a-zA-Z0-9]+$/.test(bookId)) {
alert("Book ID must be alphanumeric.");
return false;
}

if (title.length < 3) {
alert("Title must be at least 3 characters.");
```

```
 return false;
 }

 if (author === "") {
 alert("Author is required.");
 return false;
 }

 if (isNaN(quantity) || Number(quantity) <= 0) {
 alert("Quantity must be a positive number.");
 return false;
 }

 return true;
 }
 </script>
</head>

<body>
 <form method="post" action="AddBookServlet" onsubmit="return validateForm()">
<h2>Add New Book ��</h2>

 <label for="bookId">Book ID:</label>
 <input type="text" id="bookId" name="bookId" required>

 <label for="title">Title:</label>
 <input type="text" id="title" name="title" required>

 <label for="author">Author:</label>
 <input type="text" id="author" name="author" required>
 <label for="category">Category:</label>
 <select id="category" name="category" required>
 <option value="">--Select--</option>
 <option value="Fiction">Fiction</option>
 <option value="Science">Science</option>
 <option value="Technology">Technology</option>
 <option value="History">History</option>
 </select>

 <label for="quantity">Quantity:</label>
 <input type="number" id="quantity" name="quantity" required>

 <button type="submit">Add Book</button>
 </form>
</body>
</html>
```

Servlet Code (`AddBookServlet.java`)

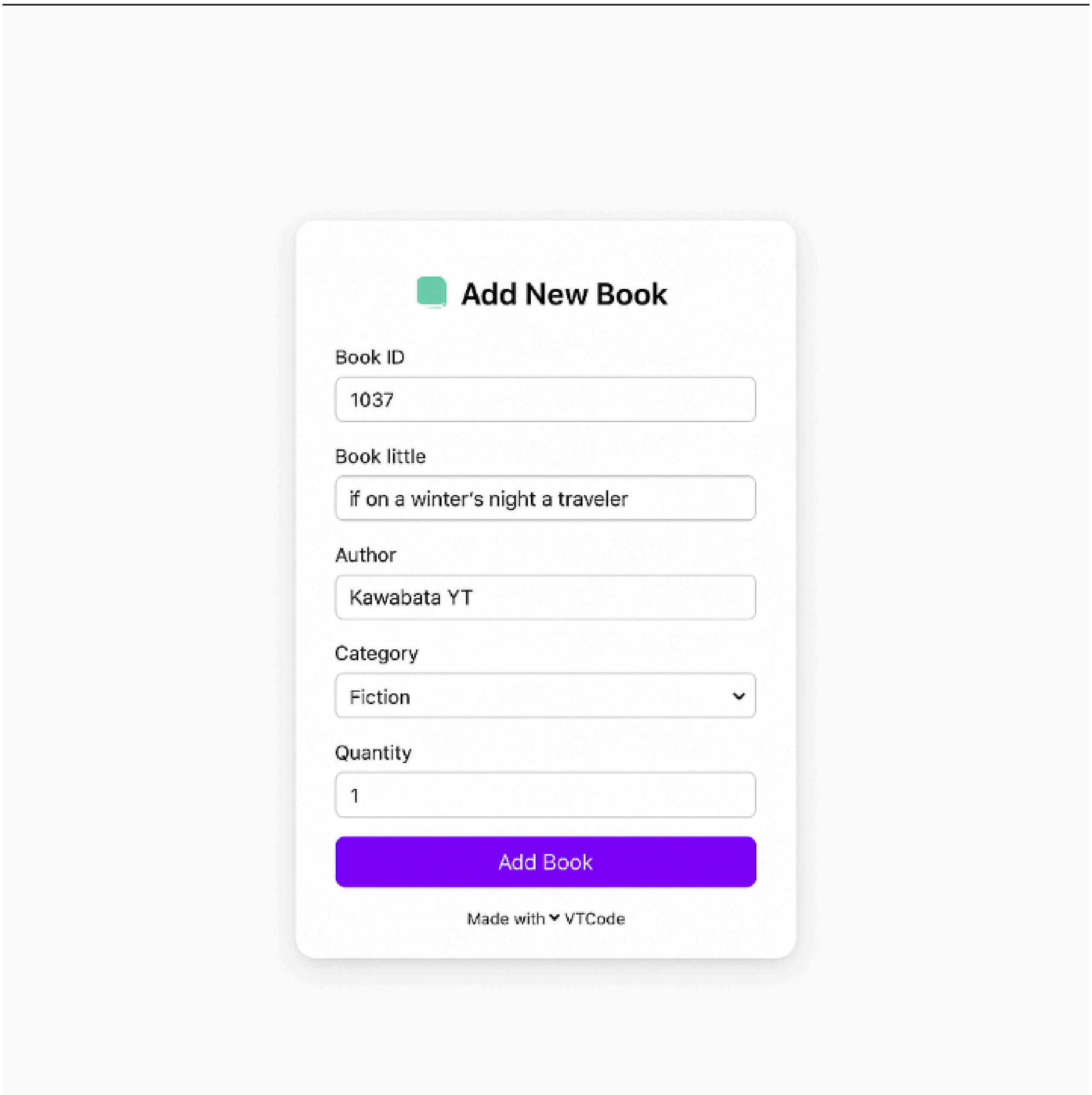
```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;

public class AddBookServlet extends HttpServlet {
 protected void doPost(HttpServletRequest request, HttpServletResponse response)
throws ServletException, IOException {
 response.setContentType("text/html");
```

```
PrintWriter out = response.getWriter();


String bookId = request.getParameter("bookId");

String title = request.getParameter("title");

String author = request.getParameter("author");

String category = request.getParameter("category");

int quantity = Integer.parseInt(request.getParameter("quantity"));


try {

Class.forName("com.mysql.jdbc.Driver");

Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/library", "root", "password");


PreparedStatement ps = con.prepareStatement("INSERT INTO books VALUES (?, ?, ?,  ?, ?)");

ps.setString(1, bookId);

ps.setString(2, title);

ps.setString(3, author);

ps.setString(4, category);

ps.setInt(5, quantity);


int i = ps.executeUpdate();


if (i > 0) {

out.println("<h2>Book Added Successfully!</h2>");

} else {
out.println("<h2>Failed to Add Book</h2>");  }


con.close();
} catch (Exception e) {
out.println("<h2>Error: " + e.getMessage() + "</h2>");  }
}
}
```

MySQL Table Structure

```
CREATE DATABASE library;
USE library;


CREATE TABLE books (
 bookId VARCHAR(20) PRIMARY KEY,
 title VARCHAR(100),
 author VARCHAR(100),
 category VARCHAR(50),
 quantity INT
);
```

OUTPUT:



Add New Book

Book ID
1037

Book little
if on a winter's night a traveler

Author
Kawabata YT

Category
Fiction

Quantity
1

RESULT:

Thus the program is executed successfully.