**WT Assignment 5**

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**Java Servlet App**

**MySQL and Database Setup**

**use bookstore;**

**CREATE DATABASE myebookshop;**

**USE myebookshop;**

**CREATE TABLE ebookshop (**

**book\_id INT PRIMARY KEY AUTO\_INCREMENT,**

**book\_title VARCHAR(255) NOT NULL,**

**book\_author VARCHAR(255) NOT NULL,**

**book\_price DECIMAL(10,2) NOT NULL,**

**quantity INT NOT NULL**

**);**

**INSERT INTO ebookshop (book\_id, book\_title, book\_author, book\_price, quantity) VALUES**

**(1, 'Computer Networks', 'Andrew S. Tanenbaum', 699.00, 10),**

**(2, 'Operating System Concepts', 'Abraham Silberschatz', 850.50, 5),**

**(3, 'Database System Concepts', 'Henry F. Korth', 799.99, 8),**

**(4, 'Software Engineering', 'Ian Sommerville', 599.00, 12),**

**(5, 'Artificial Intelligence', 'Stuart Russell', 999.00, 7),**

**(6, 'Machine Learning', 'Tom M. Mitchell', 899.00, 6),**

**(7, 'Compiler Design', 'Alfred V. Aho', 749.50, 9),**

**(8, 'Cloud Computing', 'Rajkumar Buyya', 670.00, 15),**

**(9, 'Cyber Security Essentials', 'Charles J. Brooks', 720.00, 10),**

**(10, 'Data Structures and Algorithms', 'Narasimha Karumanchi', 550.00, 14);**

**SELECT \* from ebookshop;**

**A screenshot of a computer

AI-generated content may be incorrect.**

**Dynamic Web Project Setup**

**A screenshot of a computer

AI-generated content may be incorrect.**

**A screenshot of a computer

AI-generated content may be incorrect.**

**XML and HTML files**

1. **Web.xml**

**<?xml version="1.0" encoding="UTF-8"?>**

**<web-app**

**xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"**

**xmlns="http://xmlns.jcp.org/xml/ns/javaee"**

**xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee**

**http://xmlns.jcp.org/xml/ns/javaee/web-app\_4\_0.xsd"**

**id="WebApp\_ID"**

**version="4.0">**

**<welcome-file-list>**

**<welcome-file>home.html</welcome-file>**

**</welcome-file-list>**

**<display-name>BookWebApp</display-name>**

**</web-app>**

1. **Home.html**

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta charset="ISO-8859-1">**

**<title>Book Registration</title>**

**<link rel="stylesheet" href="css/bootstrap.css">**

**<style>**

**body {**

**display: flex;**

**justify-content: center;**

**align-items: center;**

**height: 100vh;**

**background-color: #f8f9fa;**

**margin: 0;**

**}**

**.card {**

**width: 100%;**

**max-width: 500px;**

**padding: 20px;**

**border-radius: 10px;**

**box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);**

**background: white;**

**}**

**h2 {**

**padding: 10px;**

**border-radius: 5px;**

**text-align: center;**

**}**

**.btn-custom {**

**width: 100%;**

**}**

**a {**

**display: block;**

**text-align: center;**

**margin-top: 15px;**

**text-decoration: none;**

**font-weight: bold;**

**color: #007bff;**

**}**

**a:hover {**

**text-decoration: underline;**

**}**

**</style>**

**</head>**

**<body>**

**<div class="card">**

**<h2 class="bg-danger text-white">Book Registration</h2>**

**<form action="register" method="post">**

**<div class="mb-3">**

**<label class="form-label">Book Name</label>**

**<input type="text" name="bookName" class="form-control" placeholder="Enter book name" required>**

**</div>**

**<div class="mb-3">**

**<label class="form-label">Book Edition</label>**

**<input type="text" name="bookEdition" class="form-control" placeholder="Enter book edition" required>**

**</div>**

**<div class="mb-3">**

**<label class="form-label">Book Price</label>**

**<input type="number" name="bookPrice" class="form-control" placeholder="Enter book price" required min="0" step="0.01">**

**</div>**

**<div class="d-grid gap-2">**

**<button type="submit" class="btn btn-success btn-custom">Register</button>**

**<button type="reset" class="btn btn-secondary btn-custom">Cancel</button>**

**</div>**

**</form>**

**<a href="bookList">View Book List</a>**

**</div>**

**</body>**

**</html>**

**Java Codes**

1. **BookListServlet.java**

**package com.web.servlet;**

**import java.io.IOException;**

**import java.io.PrintWriter;**

**import java.sql.Connection;**

**import java.sql.DriverManager;**

**import java.sql.PreparedStatement;**

**import java.sql.ResultSet;**

**import java.sql.SQLException;**

**import javax.servlet.ServletException;**

**import javax.servlet.annotation.WebServlet;**

**import javax.servlet.http.HttpServlet;**

**import javax.servlet.http.HttpServletRequest;**

**import javax.servlet.http.HttpServletResponse;**

**@WebServlet("/bookList")**

**public class BookListServlet extends HttpServlet {**

**private static final String QUERY = "SELECT BOOK\_ID, BOOK\_TITLE, BOOK\_AUTHOR, BOOK\_PRICE, QUANTITY FROM EBOOKSHOP";**

**@Override**

**protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**// Get PrintWriter**

**PrintWriter pw = res.getWriter();**

**// Set content type**

**res.setContentType("text/html");**

**// Load JDBC driver**

**try {**

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

**} catch (ClassNotFoundException cnf) {**

**cnf.printStackTrace();**

**}**

**// Generate the connection**

**try (Connection con = DriverManager.getConnection("jdbc:mysql:///ebookstore", "root", "root");**

**PreparedStatement ps = con.prepareStatement(QUERY)) {**

**ResultSet rs = ps.executeQuery();**

**// Adding CSS styles for better table design**

**pw.println("<style>");**

**pw.println("table { width: 80%; margin: 20px auto; border-collapse: collapse; font-family: Arial, sans-serif; }");**

**pw.println("th, td { border: 1px solid black; padding: 10px; text-align: center; }");**

**pw.println("th { background-color: #f2f2f2; }");**

**pw.println("a { text-decoration: none; color: blue; }");**

**pw.println("a:hover { color: red; }");**

**pw.println("</style>");**

**pw.println("<table>");**

**pw.println("<tr>");**

**pw.println("<th>Book Id</th>");**

**pw.println("<th>Book Name</th>");**

**pw.println("<th>Book Author</th>");**

**pw.println("<th>Book Price</th>");**

**pw.println("<th>Quantity</th>");**

**pw.println("<th>Edit</th>");**

**pw.println("<th>Delete</th>");**

**pw.println("</tr>");**

**while (rs.next()) {**

**pw.println("<tr>");**

**pw.println("<td>" + rs.getInt(1) + "</td>");**

**pw.println("<td>" + rs.getString(2) + "</td>");**

**pw.println("<td>" + rs.getString(3) + "</td>");**

**pw.println("<td>" + rs.getFloat(4) + "</td>");**

**pw.println("<td>" + rs.getInt(5) + "</td>");**

**pw.println("<td><a href='editScreen?id=" + rs.getInt(1) + "'>Edit</a></td>");**

**pw.println("<td><a href='deleteurl?id=" + rs.getInt(1) + "'>Delete</a></td>");**

**pw.println("</tr>");**

**}**

**pw.println("</table>");**

**} catch (SQLException se) {**

**se.printStackTrace();**

**pw.println("<h1>" + se.getMessage() + "</h1>");**

**} catch (Exception e) {**

**e.printStackTrace();**

**pw.println("<h1>" + e.getMessage() + "</h1>");**

**}**

**pw.println("<br><a href='home.html'>Home</a>");**

**}**

**@Override**

**protected void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**doGet(req, res);**

**}**

**}**

1. **EditScreenServlet.java**

**package com.web.servlet;**

**import java.io.IOException;**

**import java.io.PrintWriter;**

**import java.sql.Connection;**

**import java.sql.DriverManager;**

**import java.sql.PreparedStatement;**

**import java.sql.ResultSet;**

**import java.sql.SQLException;**

**import javax.servlet.ServletException;**

**import javax.servlet.annotation.WebServlet;**

**import javax.servlet.http.HttpServlet;**

**import javax.servlet.http.HttpServletRequest;**

**import javax.servlet.http.HttpServletResponse;**

**@WebServlet("/editScreen")**

**public class EditScreenServlet extends HttpServlet {**

**private static final String query = "SELECT book\_id, book\_title, book\_author, book\_price, quantity FROM ebookshop WHERE book\_id = ?";**

**@Override**

**protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**// Get PrintWriter**

**PrintWriter pw = res.getWriter();**

**// Set content type**

**res.setContentType("text/html");**

**// Get the book ID from request parameters**

**int id = Integer.parseInt(req.getParameter("id"));**

**// Load JDBC driver**

**try {**

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

**} catch (ClassNotFoundException cnf) {**

**cnf.printStackTrace();**

**}**

**// Generate the database connection**

**try (Connection con = DriverManager.getConnection("jdbc:mysql:///ebookstore", "root", "root");**

**PreparedStatement ps = con.prepareStatement(query)) {**

**ps.setInt(1, id);**

**ResultSet rs = ps.executeQuery();**

**if (rs.next()) {**

**pw.println("<html><head><title>Edit Book</title>");**

**pw.println("<link rel='stylesheet' href='css/bootstrap.css'>");**

**pw.println("<style>");**

**pw.println("body { display: flex; justify-content: center; align-items: center; height: 100vh; background-color: #f8f9fa; }");**

**pw.println(".card { width: 100%; max-width: 500px; padding: 20px; border-radius: 10px; box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1); background: white; }");**

**pw.println(".btn-custom { width: 100%; }");**

**pw.println("</style>");**

**pw.println("</head><body>");**

**pw.println("<div class='card'>");**

**pw.println("<h2 class='bg-primary text-white text-center p-2'>Edit Book Details</h2>");**

**pw.println("<form action='editurl?id=" + id + "' method='post'>");**

**pw.println("<div class='mb-3'><label class='form-label'>Book Title</label>");**

**pw.println("<input type='text' name='bookTitle' class='form-control' value='" + rs.getString("book\_title") + "' required></div>");**

**pw.println("<div class='mb-3'><label class='form-label'>Book Author</label>");**

**pw.println("<input type='text' name='bookAuthor' class='form-control' value='" + rs.getString("book\_author") + "' required></div>");**

**pw.println("<div class='mb-3'><label class='form-label'>Book Price</label>");**

**pw.println("<input type='number' name='bookPrice' class='form-control' value='" + rs.getFloat("book\_price") + "' required min='0' step='0.01'></div>");**

**pw.println("<div class='mb-3'><label class='form-label'>Quantity</label>");**

**pw.println("<input type='number' name='quantity' class='form-control' value='" + rs.getInt("quantity") + "' required min='0'></div>");**

**pw.println("<div class='d-grid gap-2'>");**

**pw.println("<button type='submit' class='btn btn-success btn-custom'>Update</button>");**

**pw.println("<a href='bookList' class='btn btn-secondary btn-custom'>Cancel</a>");**

**pw.println("</div>");**

**pw.println("</form>");**

**pw.println("</div>");**

**pw.println("</body></html>");**

**} else {**

**pw.println("<h2 class='text-center text-danger'>Book not found</h2>");**

**}**

**} catch (SQLException se) {**

**se.printStackTrace();**

**pw.println("<h1>" + se.getMessage() + "</h1>");**

**} catch (Exception e) {**

**e.printStackTrace();**

**pw.println("<h1>" + e.getMessage() + "</h1>");**

**}**

**}**

**@Override**

**protected void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**doGet(req, res);**

**}**

**}**

1. **EditServlet.java**

**package com.web.servlet;**

**import java.io.IOException;**

**import java.io.PrintWriter;**

**import java.sql.Connection;**

**import java.sql.DriverManager;**

**import java.sql.PreparedStatement;**

**import java.sql.SQLException;**

**import javax.servlet.ServletException;**

**import javax.servlet.annotation.WebServlet;**

**import javax.servlet.http.HttpServlet;**

**import javax.servlet.http.HttpServletRequest;**

**import javax.servlet.http.HttpServletResponse;**

**@WebServlet("/editurl")**

**public class EditServlet extends HttpServlet {**

**private static final String query = "UPDATE ebookshop SET book\_title=?, book\_author=?, book\_price=?, quantity=? WHERE book\_id=?";**

**@Override**

**protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**// Get PrintWriter**

**PrintWriter pw = res.getWriter();**

**// Set content type**

**res.setContentType("text/html");**

**// Get the book ID from request parameters**

**int id = Integer.parseInt(req.getParameter("id"));**

**// Get the edited book details**

**String bookTitle = req.getParameter("bookTitle");**

**String bookAuthor = req.getParameter("bookAuthor");**

**float bookPrice = Float.parseFloat(req.getParameter("bookPrice"));**

**int quantity = Integer.parseInt(req.getParameter("quantity"));**

**// Load JDBC driver**

**try {**

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

**} catch (ClassNotFoundException cnf) {**

**cnf.printStackTrace();**

**}**

**// Generate the database connection**

**try (Connection con = DriverManager.getConnection("jdbc:mysql:///ebookstore", "root", "root");**

**PreparedStatement ps = con.prepareStatement(query)) {**

**ps.setString(1, bookTitle);**

**ps.setString(2, bookAuthor);**

**ps.setFloat(3, bookPrice);**

**ps.setInt(4, quantity);**

**ps.setInt(5, id);**

**int count = ps.executeUpdate();**

**// HTML Response with Bootstrap styling**

**pw.println("<html><head><title>Edit Confirmation</title>");**

**pw.println("<link rel='stylesheet' href='css/bootstrap.css'>");**

**pw.println("<style>");**

**pw.println("body { display: flex; justify-content: center; align-items: center; height: 100vh; background-color: #f8f9fa; }");**

**pw.println(".card { width: 100%; max-width: 500px; padding: 20px; border-radius: 10px; box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1); background: white; }");**

**pw.println(".btn-custom { width: 100%; }");**

**pw.println("</style>");**

**pw.println("</head><body>");**

**pw.println("<div class='card text-center'>");**

**if (count == 1) {**

**pw.println("<h2 class='text-success'>Record Updated Successfully</h2>");**

**} else {**

**pw.println("<h2 class='text-danger'>Failed to Update Record</h2>");**

**}**

**pw.println("<div class='d-grid gap-2 mt-3'>");**

**pw.println("<a href='bookList' class='btn btn-primary btn-custom'>Go to Book List</a>");**

**pw.println("<a href='home.html' class='btn btn-secondary btn-custom'>Home</a>");**

**pw.println("</div>");**

**pw.println("</div>");**

**pw.println("</body></html>");**

**} catch (SQLException se) {**

**se.printStackTrace();**

**pw.println("<h1>Error: " + se.getMessage() + "</h1>");**

**} catch (Exception e) {**

**e.printStackTrace();**

**pw.println("<h1>Error: " + e.getMessage() + "</h1>");**

**}**

**}**

**@Override**

**protected void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**doGet(req, res);**

**}**

**}**

1. **DeleteServlet.java**

**package com.web.servlet;**

**import java.io.IOException;**

**import java.io.PrintWriter;**

**import java.sql.Connection;**

**import java.sql.DriverManager;**

**import java.sql.PreparedStatement;**

**import java.sql.SQLException;**

**import javax.servlet.ServletException;**

**import javax.servlet.annotation.WebServlet;**

**import javax.servlet.http.HttpServlet;**

**import javax.servlet.http.HttpServletRequest;**

**import javax.servlet.http.HttpServletResponse;**

**@WebServlet("/deleteurl")**

**public class DeleteServlet extends HttpServlet {**

**private static final String query = "DELETE FROM ebookshop WHERE book\_id=?";**

**@Override**

**protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**// Get PrintWriter**

**PrintWriter pw = res.getWriter();**

**// Set content type**

**res.setContentType("text/html");**

**// Get the book ID from request parameters**

**int id = Integer.parseInt(req.getParameter("id"));**

**// Load JDBC driver**

**try {**

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

**} catch (ClassNotFoundException cnf) {**

**cnf.printStackTrace();**

**}**

**// Generate the database connection**

**try (Connection con = DriverManager.getConnection("jdbc:mysql:///ebookstore", "root", "root");**

**PreparedStatement ps = con.prepareStatement(query)) {**

**ps.setInt(1, id);**

**int count = ps.executeUpdate();**

**// HTML Response with Bootstrap styling**

**pw.println("<html><head><title>Delete Confirmation</title>");**

**pw.println("<link rel='stylesheet' href='css/bootstrap.css'>");**

**pw.println("<style>");**

**pw.println("body { display: flex; justify-content: center; align-items: center; height: 100vh; background-color: #f8f9fa; }");**

**pw.println(".card { width: 100%; max-width: 500px; padding: 20px; border-radius: 10px; box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1); background: white; }");**

**pw.println(".btn-custom { width: 100%; }");**

**pw.println("</style>");**

**pw.println("</head><body>");**

**pw.println("<div class='card text-center'>");**

**if (count == 1) {**

**pw.println("<h2 class='text-success'>Record Deleted Successfully</h2>");**

**} else {**

**pw.println("<h2 class='text-danger'>Failed to Delete Record</h2>");**

**}**

**pw.println("<div class='d-grid gap-2 mt-3'>");**

**pw.println("<a href='bookList' class='btn btn-primary btn-custom'>Go to Book List</a>");**

**pw.println("<a href='home.html' class='btn btn-secondary btn-custom'>Home</a>");**

**pw.println("</div>");**

**pw.println("</div>");**

**pw.println("</body></html>");**

**} catch (SQLException se) {**

**se.printStackTrace();**

**pw.println("<h1>Error: " + se.getMessage() + "</h1>");**

**} catch (Exception e) {**

**e.printStackTrace();**

**pw.println("<h1>Error: " + e.getMessage() + "</h1>");**

**}**

**}**

**@Override**

**protected void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**doGet(req, res);**

**}**

**}**

1. **RegisterServlet.java**

**package com.web.servlet;**

**import java.io.IOException;**

**import java.io.PrintWriter;**

**import java.sql.Connection;**

**import java.sql.DriverManager;**

**import java.sql.PreparedStatement;**

**import java.sql.SQLException;**

**import javax.servlet.ServletException;**

**import javax.servlet.annotation.WebServlet;**

**import javax.servlet.http.HttpServlet;**

**import javax.servlet.http.HttpServletRequest;**

**import javax.servlet.http.HttpServletResponse;**

**@WebServlet("/register")**

**public class RegisterServlet extends HttpServlet {**

**private static final String query = "INSERT INTO ebookshop(book\_title, book\_author, book\_price, quantity) VALUES(?,?,?,?)";**

**@Override**

**protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**// Get PrintWriter**

**PrintWriter pw = res.getWriter();**

**// Set content type**

**res.setContentType("text/html");**

**// Get the book info from request parameters**

**String bookTitle = req.getParameter("bookTitle");**

**String bookAuthor = req.getParameter("bookAuthor");**

**float bookPrice = Float.parseFloat(req.getParameter("bookPrice"));**

**int quantity = Integer.parseInt(req.getParameter("quantity"));**

**// Load JDBC driver**

**try {**

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

**} catch (ClassNotFoundException cnf) {**

**cnf.printStackTrace();**

**}**

**// Generate the connection**

**try (Connection con = DriverManager.getConnection("jdbc:mysql:///ebookstore", "root", "root");**

**PreparedStatement ps = con.prepareStatement(query)) {**

**ps.setString(1, bookTitle);**

**ps.setString(2, bookAuthor);**

**ps.setFloat(3, bookPrice);**

**ps.setInt(4, quantity);**

**int count = ps.executeUpdate();**

**if (count == 1) {**

**pw.println("<h2>Record is Registered Successfully</h2>");**

**} else {**

**pw.println("<h2>Record Not Registered Successfully</h2>");**

**}**

**} catch (SQLException se) {**

**se.printStackTrace();**

**pw.println("<h1>" + se.getMessage() + "</h1>");**

**} catch (Exception e) {**

**e.printStackTrace();**

**pw.println("<h1>" + e.getMessage() + "</h1>");**

**}**

**pw.println("<a href='home.html'>Home</a>");**

**pw.println("<br>");**

**pw.println("<a href='bookList'>Book List</a>");**

**}**

**@Override**

**protected void doPost(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException {**

**doGet(req, res);**

**}**

**}**

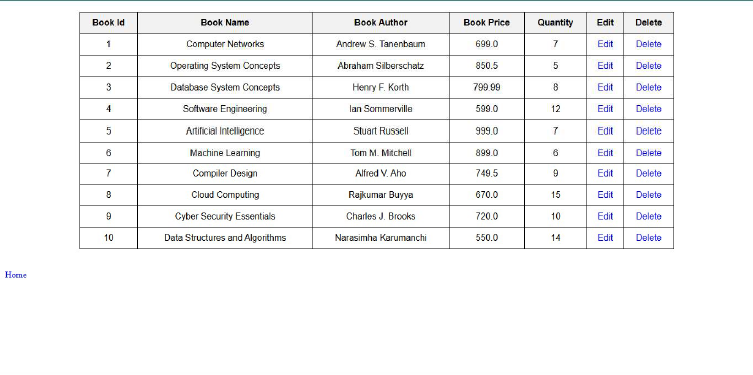
**Output**

**A screen shot of a computer

AI-generated content may be incorrect.A table with numbers and letters

AI-generated content may be incorrect.A screenshot of a computer

AI-generated content may be incorrect.A screen shot of a computer screen

AI-generated content may be incorrect.A screen shot of a computer

AI-generated content may be incorrect.A table with numbers and names

AI-generated content may be incorrect.A screen shot of a registration form

AI-generated content may be incorrect.A table with text on it

AI-generated content may be incorrect.**