

ASSIGNMENT NO. 3

3. Create servlet program for student registration and insert information into MySQL

Student_Registration.html

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Student Registration System</title>

  <style>

    * {

      margin: 0;

      padding: 0;

      box-sizing: border-box;

      font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;

    }

    body {

      background: linear-gradient(135deg, #6a11cb 0%, #2575fc 100%);

      min-height: 100vh;

      display: flex;

      justify-content: center;

      align-items: center;

      padding: 20px;

    }

    .container {

      width: 100%;

      max-width: 500px;

      background: white;

      border-radius: 10px;
```

```
    box-shadow: 0 10px 30px rgba(0, 0, 0, 0.2);  
    overflow: hidden;  
}
```

```
.header {  
    background: #4a6fc7;  
    color: white;  
    padding: 25px;  
    text-align: center;  
}
```

```
.header h1 {  
    font-weight: 600;  
    font-size: 28px;  
}
```

```
.form-container {  
    padding: 30px;  
}
```

```
.form-group {  
    margin-bottom: 20px;  
}
```

```
label {  
    display: block;  
    margin-bottom: 8px;  
    font-weight: 500;  
    color: #333;  
}
```

```
input[type="text"], select {  
    width: 100%;
```

```
padding: 12px 15px;

border: 1px solid #ddd;

border-radius: 5px;

font-size: 16px;

transition: border-color 0.3s;

}
```

```
input[type="text"]:focus, select:focus {

    border-color: #4a6fc7;

    outline: none;

    box-shadow: 0 0 0 3px rgba(74, 111, 199, 0.2);

}
```

```
.radio-group, .checkbox-group {

    display: flex;

    flex-wrap: wrap;

    gap: 15px;

    margin-top: 5px;

}
```

```
.radio-option, .checkbox-option {

    display: flex;

    align-items: center;

    gap: 5px;

}
```

```
button {

    width: 100%;

    padding: 14px;

    background: #4a6fc7;

    color: white;

    border: none;

    border-radius: 5px;
```

```
font-size: 16px;

font-weight: 600;

cursor: pointer;

transition: background 0.3s;

margin-top: 10px;
}
```

```
button:hover {

  background: #3b5aa6;
}
```

```
.message {

  padding: 15px;

  margin: 20px 0;

  border-radius: 5px;

  text-align: center;

  font-weight: 500;
}
```

```
.error {

  background-color: #f8d7da;

  color: #721c24;

  border: 1px solid #f5c6cb;
}
```

```
.success {

  background-color: #d4edda;

  color: #155724;

  border: 1px solid #c3e6cb;
}
```

```
</style>

</head>

<body>
```

```
<div class="container">

  <div class="header">

    <h1>Student Registration System</h1>

  </div>


  <div class="form-container">

    <!-- Message Area for displaying success/error messages -->

    <div id="messageArea"></div>


    <form id="registrationForm" action="register" method="post">

      <div class="form-group">

        <label for="roll_number">Roll Number:</label>

        <input type="text" id="roll_number" name="roll_number" required>

      </div>


      <div class="form-group">

        <label for="first_name">First Name:</label>

        <input type="text" id="first_name" name="first_name" required>

      </div>


      <div class="form-group">

        <label for="last_name">Last Name:</label>

        <input type="text" id="last_name" name="last_name" required>

      </div>


      <div class="form-group">

        <label for="academic_year">Academic Year:</label>

        <select id="academic_year" name="academic_year" required>

          <option value="">Select Academic Year</option>

          <option value="First Year">First Year</option>

          <option value="Second Year">Second Year</option>

          <option value="Third Year">Third Year</option>

          <option value="Fourth Year">Fourth Year</option>

        </select>

      </div>

    </form>

  </div>

</div>
```

```
</select>

</div>

<div class="form-group">
  <label>Gender:</label>

  <div class="radio-group">
    <div class="radio-option">
      <input type="radio" id="male" name="gender" value="Male" required>
      <label for="male">Male</label>
    </div>
    <div class="radio-option">
      <input type="radio" id="female" name="gender" value="Female">
      <label for="female">Female</label>
    </div>
    <div class="radio-option">
      <input type="radio" id="other" name="gender" value="Other">
      <label for="other">Other</label>
    </div>
  </div>
</div>
</div>
```

```
<div class="form-group">
  <label>Qualification:</label>

  <div class="checkbox-group">
    <div class="checkbox-option">
      <input type="checkbox" id="hsc" name="qualification" value="HSC">
      <label for="hsc">HSC</label>
    </div>
    <div class="checkbox-option">
      <input type="checkbox" id="ssc" name="qualification" value="SSC">
      <label for="ssc">SSC</label>
    </div>
    <div class="checkbox-option">
```

```

        <input type="checkbox" id="diploma" name="qualification" value="Diploma">

        <label for="diploma">Diploma</label>

    </div>

    <div class="checkbox-option">

        <input type="checkbox" id="be" name="qualification" value="BE">

        <label for="be">BE</label>

    </div>

</div>

</div>

<button type="submit">Register Student</button>

</form>

</div>

</div>

<script>

    // Function to show messages

    function showMessage(message, type) {

        const messageArea = document.getElementById('messageArea');

        messageArea.innerHTML = `<div class="message ${type}">${message}</div>`;

        // Scroll to message

        messageArea.scrollIntoView({ behavior: 'smooth' });

    }

    // Check URL parameters for status messages

    const urlParams = new URLSearchParams(window.location.search);

    const status = urlParams.get('status');

    const rollNumber = urlParams.get('rollNumber');

    if (status === 'success') {

        showMessage(`Student with Roll Number ${rollNumber} successfully registered!`, 'success');

    } else if (status === 'error') {

        if (rollNumber) {

```

```

        showMessage(`Error: Student with Roll Number ${rollNumber} is already registered.`, 'error');
    } else {
        showMessage('Error registering student. Please try again.', 'error');
    }
}

// Form validation
document.getElementById('registrationForm').addEventListener('submit', function(e) {
    // Basic validation
    const rollNumber = document.getElementById('roll_number').value;
    const firstName = document.getElementById('first_name').value;
    const lastName = document.getElementById('last_name').value;
    const academicYear = document.getElementById('academic_year').value;
    const gender = document.querySelector('input[name="gender"]:checked');
    const qualifications = document.querySelectorAll('input[name="qualification"]:checked');

    if (!rollNumber || !firstName || !lastName || !academicYear || !gender) {
        e.preventDefault();
        showMessage('Please fill all required fields', 'error');
        return;
    }

    if (qualifications.length === 0) {
        e.preventDefault();
        showMessage('Please select at least one qualification', 'error');
        return;
    }
});
</script>
</body>
</html>

```

StudentRegistration.java


```
package wtexp3;
```

```
import java.io.*;
```

```
import javax.servlet.*;
```

```
import javax.servlet.http.*;
```

```
import javax.servlet.annotation.WebServlet;
```

```
import java.sql.*;
```

```
@WebServlet("/register")
```

```
public class StudentRegistration extends HttpServlet {
```

```
    private static final String JDBC_URL = "jdbc:mysql://localhost:3306/kit";
```

```
    private static final String JDBC_USER = "root";
```

```
    private static final String JDBC_PASSWORD = "root";
```

```
@Override
```

```
protected void doPost(HttpServletRequest request, HttpServletResponse response)
```

```
    throws ServletException, IOException {
```

```
    response.setContentType("text/html");
```

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

```
    String rollNumber = request.getParameter("roll_number");
```

```
    String firstName = request.getParameter("first_name");
```

```
    String lastName = request.getParameter("last_name");
```

```
    String academicYear = request.getParameter("academic_year");
```

```
    String gender = request.getParameter("gender");
```

```
    String[] qualifications = request.getParameterValues("qualification");
```

```
    String qualification = "";
```

```
    if (qualifications != null) {
```

```
        qualification = String.join(" ", qualifications);
```

```
    }
```

```

Connection conn = null;

PreparedStatement psCheck = null;

PreparedStatement psInsert = null;

ResultSet rs = null;

try {

    // Load JDBC Driver

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

    // Establish connection

    conn = DriverManager.getConnection(JDBC_URL, JDBC_USER, JDBC_PASSWORD);

    // Check if student already exists

    String checkQuery = "SELECT roll_number FROM students WHERE roll_number = ?";

    psCheck = conn.prepareStatement(checkQuery);

    psCheck.setString(1, rollNumber);

    rs = psCheck.executeQuery();

    if (rs.next()) {

        // Student already exists - redirect with error

        response.sendRedirect("student_registration.html?status=error&rollNumber=" + rollNumber);

    } else {

        // Insert student data

        String insertQuery = "INSERT INTO students (roll_number, first_name, last_name, academic_year, gender, qualification) VALUES (?, ?, ?, ?, ?, ?)";

        psInsert = conn.prepareStatement(insertQuery);

        psInsert.setString(1, rollNumber);

        psInsert.setString(2, firstName);

        psInsert.setString(3, lastName);

        psInsert.setString(4, academicYear);

        psInsert.setString(5, gender);

        psInsert.setString(6, qualification);

        int result = psInsert.executeUpdate();
    }
}

```

```

        if (result > 0) {
            // Success - redirect with success message
            response.sendRedirect("student_registration.html?status=success&rollNumber=" + rollNumber);
        } else {
            // Insert failed - redirect with error
            response.sendRedirect("student_registration.html?status=error");
        }
    }
} catch (ClassNotFoundException e) {
    e.printStackTrace();
    response.sendRedirect("student_registration.html?status=error&message=Database driver not found");
} catch (SQLException e) {
    e.printStackTrace();
    response.sendRedirect("student_registration.html?status=error&message=Database error");
} catch (Exception e) {
    e.printStackTrace();
    response.sendRedirect("student_registration.html?status=error&message=Unexpected error");
} finally {
    // Close resources
    try { if (rs != null) rs.close(); } catch (SQLException e) { e.printStackTrace(); }
    try { if (psCheck != null) psCheck.close(); } catch (SQLException e) { e.printStackTrace(); }
    try { if (psInsert != null) psInsert.close(); } catch (SQLException e) { e.printStackTrace(); }
    try { if (conn != null) conn.close(); } catch (SQLException e) { e.printStackTrace(); }
}
}

```

@Override

```

protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    // Redirect GET requests to the registration form
    response.sendRedirect("student_registration.html");
}

```

}

localhost:8085/studentRegistration/student_registration.html

Student Registration System

Roll Number:

First Name:

Last Name:

Academic Year:

Gender:
☐ Male ☒ Female ☐ Other

Qualification:
☐ HSC ☐ SSC ☐ Diploma ☒ BE

localhost:8085/studentRegistration/student_registration.html?status=success&rollNumber=21

Student Registration System

Student with Roll Number 21 successfully registered!

Roll Number:

First Name:

Last Name:

Academic Year:

Gender:
☐ Male ☐ Female ☐ Other

Qualification:
☐ HSC ☐ SSC ☐ Diploma ☐ BE

localhost:8085/studentRegistration/student_registration.html?status=error&rollNumber=2

Student Registration System

Error: Student with Roll Number 2 is already registered.

Roll Number:

First Name:

Last Name:

Academic Year:

Gender:
☐ Male ☐ Female ☐ Other

Qualification:
☐ HSC ☐ SSC ☐ Diploma ☐ BE