

ASSIGNMENT NO. 3

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

Student_Registration.html

```
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>

```

```
</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 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");

}

```

}

The screenshot shows a web browser window with the URL `localhost:8085/studentRegistration/student_registration.html`. The page title is "Student Registration System". The form fields are filled as follows:

- Roll Number: 20
- First Name: Sita
- Last Name: More
- Academic Year: Third Year
- Gender: Female (radio button selected)
- Qualification: HSC (checkbox checked), SSC (checkbox unchecked), Diploma (checkbox unchecked), BE (checkbox checked)

A blue "Register Student" button is at the bottom.

The screenshot shows a web browser window with the URL `localhost:8085/studentRegistration/student_registration.html?status=success&rollNumber=21`. The page title is "Student Registration System". A green success message box displays: "Student with Roll Number 21 successfully registered!". The rest of the form fields are identical to the previous screenshot.

The screenshot shows a web browser window with the URL `localhost:8085/studentRegistration/student_registration.html?status=error&rollNumber=2`. The page title is "Student Registration System". A red error message box displays: "Error: Student with Roll Number 2 is already registered.". The rest of the form fields are identical to the previous screenshots.