

Experiment 2

1. Create an application to register new user using servlet.

Guideline:

- Registration form should contain all require fields like Name, Address, Age, Gender, City
- Design UserDB with table name Registration User with appropriate field name and perform insertion operation using JDBC driver.
- Validation on each field is mandatory.
- Appropriate messages should be displayed for errors and processes.

Firstly, we created a **Dynamic Web Project** named **Experiment2** Within this project, we developed two forms: one is an **HTML form** (**index.html**) for designing the user registration interface, and the other is a **Servlet form** (**Register.java**) for handling backend logic. The HTML form is used to collect user data, which is then passed to the Servlet using appropriate methods. Additionally, we created a database named **experiment2**, and within this database, we designed a table named **registration** to store the submitted user information.

In the Servlet file, I have implemented a **try-catch block**. Inside the **try block**, I have used an **if-else statement**. If the database and table names are correct, the **if block** will display a **"Successful"** message. If the registration is not successful, the **else block** will display a **"Failed"** message. Additionally, if any exception occurs, an error message will be displayed inside the **catch block**.

HTML FORM(**index.html**)

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

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

  <title>User Registration Form</title>

  <style>

    /* Set basic styles for the body, including font, gradient background, and center alignment */

    body {

      font-family: Arial, sans-serif;

      margin: 0;

      padding: 0;
```

```

background: linear-gradient(45deg, #6a11cb, #2575fc);

height: 100vh;

display: flex;

justify-content: center;

align-items: center;

}

/* Style for the form container box */

.container {

background: white;

border-radius: 10px;

box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);

padding: 20px;

width: 100%;

max-width: 400px;

animation: fadeIn 1s ease-in-out; /* Add fade-in animation */

}

/* Style for the form heading */

h2 {

text-align: center;

color: #333;

}

/* Style for form labels */

form label {

display: block;

margin: 10px 0 5px;

font-weight: bold;

}

/* Style for input fields and select dropdown */

form input, form select {

width: 100%;

padding: 10px;

margin-bottom: 15px;

border: 1px solid #ccc;

border-radius: 5px;

}

/* Style for the submit button */

button {

```

```

width: 100%;

background: #6a11cb;

color: white;

border: none;

padding: 10px;

font-size: 16px;

border-radius: 5px;

cursor: pointer;

transition: background 0.3s ease; /* Add hover effect transition */
}

/* Change button background on hover */
button:hover {

background: #2575fc;

}

/* Style for the message area below the form */
.message {

text-align: center;

margin-top: 10px;

font-size: 14px;

}

/* Keyframe animation for fade-in effect */
@keyframes fadeIn {

from {

opacity: 0;

transform: translateY(20px);

}

to {

opacity: 1;

transform: translateY(0);

}

}

</style>

</head>

<body>

<div class="container">

<!-- Form header -->

<h2>User Registration</h2>

```

```
<!-- User registration form -->

<form action="regForm" method="post">

  <label for="name">Name:</label>

  <input type="text" id="name" name="name" required> <!-- Input for user name -->


  <label for="address">Address:</label>

  <input type="text" id="address" name="address" required> <!-- Input for user address -->


  <label for="age">Age:</label>

  <input type="number" id="age" name="age" required> <!-- Input for user age -->


  <label for="gender">Gender:</label>

  <select id="gender" name="gender" required> <!-- Dropdown for gender selection -->

    <option value="" disabled selected>Select Gender</option>

    <option value="Male">Male</option>

    <option value="Female">Female</option>

    <option value="Other">Other</option>

  </select>


  <label for="city">City:</label>

  <input type="text" id="city" name="city" required> <!-- Input for user city -->


  <!-- Submit button -->

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

</form>

<div class="message">

  <!-- Placeholder for displaying success or error messages -->

</div>

</div>

</body>

</html>
```

Servlet Form(Register.java)

```
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;

// Define the servlet and map it to the "/regForm" URL
@WebServlet("/regForm")

public class Register extends HttpServlet {

    private static final long serialVersionUID = 1L;

    // Handle POST requests from the form submission
    protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException
    {

        PrintWriter out = response.getWriter(); // Get the writer object to output HTML content

        String myname = request.getParameter("name");    // Retrieve the 'name' input value

        String myaddress = request.getParameter("address"); // Retrieve the 'address' input value

        String myage = request.getParameter("age");    // Retrieve the 'age' input value

        String mygender = request.getParameter("gender"); // Retrieve the 'gender' input value

        String mycity = request.getParameter("city");    // Retrieve the 'city' input value

        response.setContentType("text/html"); // Set response content type to HTML

        try {

            // Load MySQL JDBC driver

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

            // Establish a connection to the database

            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/Experiment2", "root", "807280");
```

```

// Prepare an SQL query to insert form data into the database

PreparedStatement ps = con.prepareStatement("INSERT INTO register (name, address, age, gender, city) VALUES
(?, ?, ?, ?, ?)");

ps.setString(1, myname); // Set 'name' value

ps.setString(2, myaddress); // Set 'address' value

ps.setString(3, myage); // Set 'age' value

ps.setString(4, mygender); // Set 'gender' value

ps.setString(5, mycity); // Set 'city' value

int count = ps.executeUpdate(); // Execute the SQL query// Check if the insertion was successful

if (count > 0) {

    // Output success HTML page with a "Go Back" button

    out.println("<html><head>");

    out.println("<style>");

    out.println("body { display: flex; justify-content: center; align-items: center; height: 100vh; margin: 0;
background-color: #f0f8ff; font-family: Arial, sans-serif; }");

    out.println(".container { text-align: center; }");

    out.println(".container h1 { color: green; }");

    out.println(".button { text-decoration: none; color: white; background-color: #6a11cb; padding: 10px 20px; border-
radius: 5px; font-size: 16px; transition: all 0.3s ease; }");

    out.println(".button:hover { background-color: #9400d3; transform: scale(1.1); }");

    out.println("</style>");

    out.println("</head><body>");

    out.println("<div class='container'>");

    out.println("<h1>User Registered Successfully!</h1>");

    out.println("<a href='index.html' class='button'>Go Back</a>");

    out.println("</div>");

    out.println("</body></html>");

}

else

{

    // Output failure HTML page with a "Go Back" button

    out.println("<html><head>");

    out.println("<style>");

    out.println("body { display: flex; justify-content: center; align-items: center; height: 100vh; margin: 0;
background-color: #f8d7da; font-family: Arial, sans-serif; }");

    out.println(".container { text-align: center; }");

```

```

        out.println(".container h1 { color: red; }");

        out.println(".button { text-decoration: none; color: white; background-color: #dc3545; padding: 10px 20px;
border-radius: 5px; font-size: 16px; transition: all 0.3s ease; }");

        out.println(".button:hover { background-color: #c82333; transform: scale(1.1); }");

        out.println("</style>");

        out.println("</head><body>");

        out.println("<div class='container'>");

        out.println("<h1>Registration Failed. Please Try Again.</h1>");

        out.println("<a href='index.html' class='button'>Go Back</a>");

        out.println("</div>");

        out.println("</body></html>");

    }

}

catch (Exception e)

{

    // Handle exceptions and output an error page

    e.printStackTrace();

    out.println("<html><head>");

    out.println("<style>");

        out.println("body { display: flex; justify-content: center; align-items: center; height: 100vh; margin: 0; background-
color: #f8d7da; font-family: Arial, sans-serif; }");

        out.println(".container { text-align: center; }");

        out.println(".container h1 { color: red; }");

        out.println(".button { text-decoration: none; color: white; background-color: #dc3545; padding: 10px 20px; border-
radius: 5px; font-size: 16px; transition: all 0.3s ease; }");

        out.println(".button:hover { background-color: #c82333; transform: scale(1.1); }");

        out.println("</style>");

        out.println("</head><body>");

        out.println("<div class='container'>");

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

        out.println("<a href='index.html' class='button'>Go Back</a>");

        out.println("</div>");

        out.println("</body></html>");

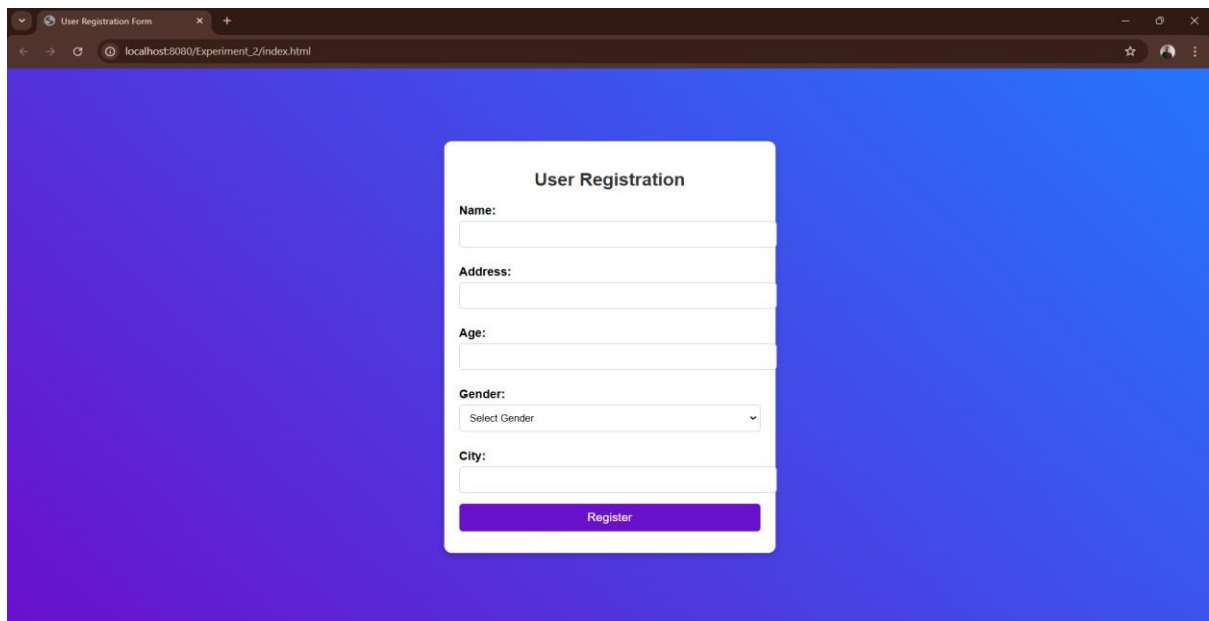
    }

}

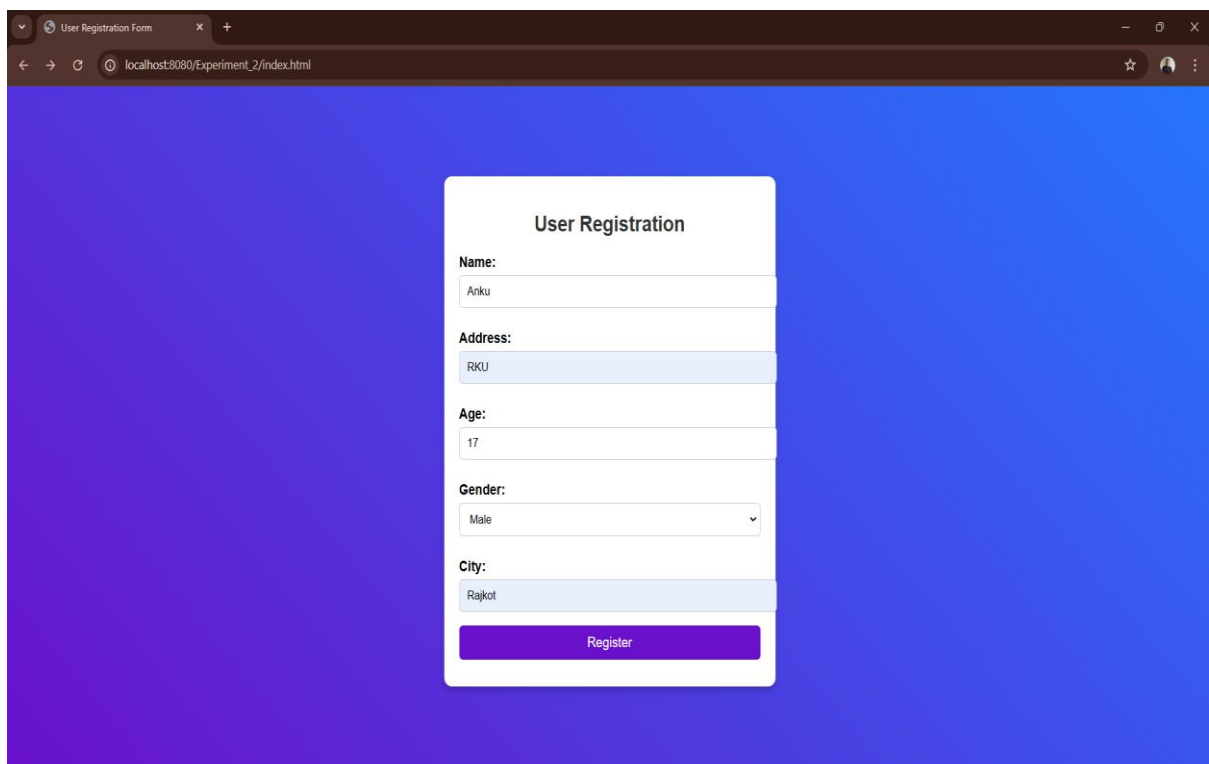
}

```

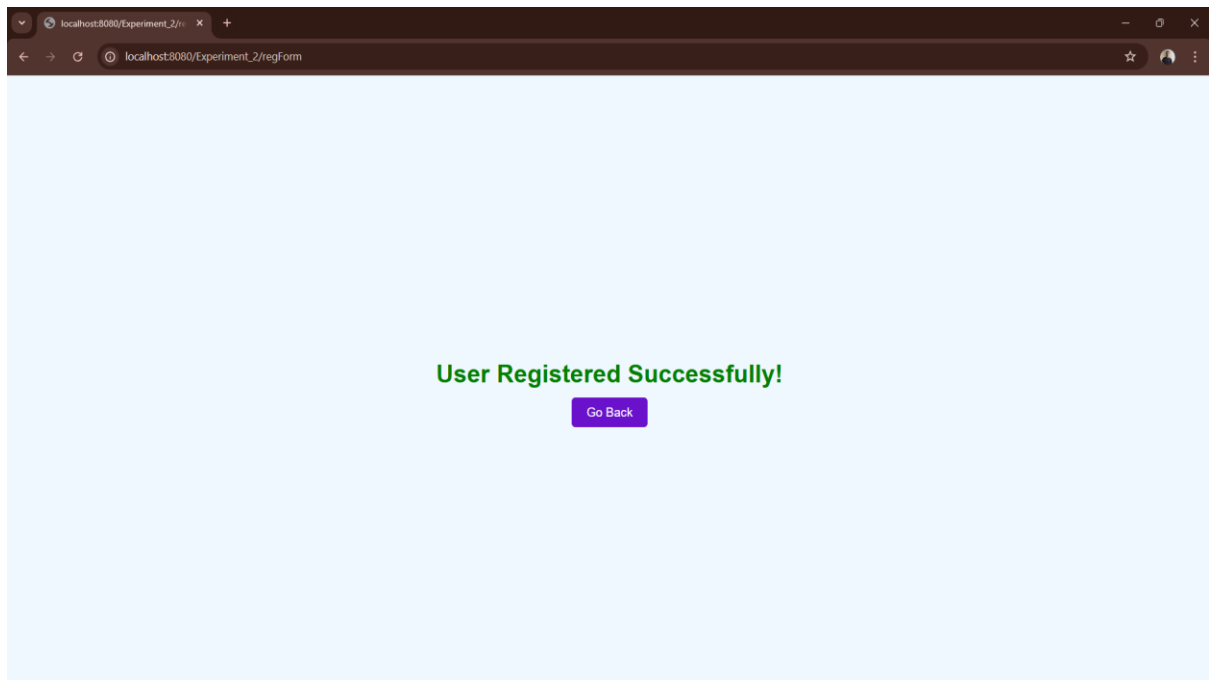
Output:



The screenshot shows a web browser window with the title 'User Registration Form' and the URL 'localhost:8080/Experiment_2/index.html'. The background is a blue gradient. In the center is a white box titled 'User Registration'. Inside the box, there are several input fields: 'Name:', 'Address:', 'Age:', 'Gender:' (a dropdown menu with 'Select Gender' selected), and 'City:'. At the bottom of the box is a red button labeled 'Register'.



The screenshot shows the same web browser window as above, but now the form fields are filled with sample data. The 'Name' field contains 'Anku', the 'Address' field contains 'RKU', the 'Age' field contains '17', the 'Gender' dropdown menu has 'Male' selected, and the 'City' field contains 'Rajkot'. The red 'Register' button remains at the bottom of the form box.



Before:

```
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| demo |
| experiment2 |
| mysql |
| performance_schema |
| test |
+-----+
6 rows in set (0.00 sec)

mysql> use experiment2;
Database changed
mysql> CREATE TABLE register(name VARCHAR(20), address VARCHAR(30), age VARCHAR(20), gender VARCHAR(20), city VARCHAR(30));
Query OK, 0 rows affected (0.02 sec)

mysql> desc register;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| name | varchar(20) | YES | | NULL | |
| address | varchar(30) | YES | | NULL | |
| age | varchar(20) | YES | | NULL | |
| gender | varchar(20) | YES | | NULL | |
| city | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> select * from register;
Empty set (0.00 sec)

mysql> |
```

After:

```
mysql> select * from register;
```

name	address	age	gender	city
Ankit	RK University	20	Male	Muzaffarpur
Shailendra Yadav	Bihar	21	Male	Gopalganj
Anu	Bihar	18	Female	Patna
Lakshya Kumar	Gujarat	20	Male	Ahmedabad
Sunil Kumar	Bihar	19	Male	Samstipur
Anku	RKU	17	Male	Rajkot

```
6 rows in set (0.00 sec)
```

```
mysql> |
```