

EXERCISE:6

**WRITE PROGRAMS IN JAVA TO CREATE THREE-TIER APPLICATIONS USING
JSP AND DATABASES**

- **For conducting on-line examination.**
- **For displaying student mark list. Assume that student information is available in a database which has been stored in a database server.**

index.html:

```
<!DOCTYPE html>
<html>
<head>
  <title>Online Examination</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      background-color: #f0f0f0;
      margin: 0;
      padding: 0;
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
    }

    .container {
      text-align: center;
      background-color: #fff;
      padding: 30px;
      width: 400px;
      border-radius: 10px;
      box-shadow: 0 0 15px rgba(0, 0, 0, 0.1);
    }

    h2 {
      margin-bottom: 30px;
      color: #333;
    }

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

```
label {
  font-size: 16px;
  text-align: left;
  display: block;
  margin-bottom: 8px;
  color: #333;
}

input[type="text"], input[type="submit"] {
  width: 95%;
  padding: 10px;
  margin-bottom: 20px;
  border: 1px solid #ccc;
  border-radius: 5px;
  font-size: 16px;
}

input[type="submit"] {
  background-color: #4CAF50;
  color: white;
  border: none;
  cursor: pointer;
  transition: background-color 0.3s;
}

input[type="submit"]:hover {
  background-color: #45a049;
}

.secondary-btn {
  background-color: #f0f0f0;
  color: #333;
  border: 1px solid #ccc;
}

.secondary-btn:hover {
  background-color: #ddd;
}
</style>
</head>
<body>
<div class="container">
  <h2>Welcome to the Quiz!</h2>
  <form action="quiz.jsp" method="post">
```

RATHINA BHARGHAVI A
953622104082

```
<label for="name">Name:</label>
<input type="text" id="name" name="name" required>

<label for="regno">Registration Number:</label>
<input type="text" id="regno" name="regno" required>

<input type="submit" value="Start Quiz">
</form>

<form action="leaderboard.jsp" method="get">
  <input type="submit" class="secondary-btn" value="View Scoreboard">
</form>
</div>
</body>
</html>
```

quiz.jsp:

```
<%@ page import="java.sql.*" %>
<%
String name = request.getParameter("name");
String regno = request.getParameter("regno");

Connection conn = null;
PreparedStatement ps = null;
ResultSet rs = null;
String url =
"jdbc:mysql://localhost:3306/test?zeroDateTimeBehavior=CONVERT_TO_NULL";
String user = "root";
String password = "Bharghavi@04";

try {
  Class.forName("com.mysql.cj.jdbc.Driver");
  conn = DriverManager.getConnection(url, user, password);

  ps = conn.prepareStatement("SELECT mark FROM stud_data WHERE regno = ?");
  ps.setString(1, regno);
  rs = ps.executeQuery();

  if (rs.next()) {
    int mark = rs.getInt("mark");
    out.println("<h3>You have already attempted the quiz.</h3>");
    out.println("<h3>Your score : " + mark + "</h3>");
  } else {
```

```
String insertQuery = "INSERT INTO stud_data (regno, name, mark) VALUES (?, ?, ?)";
```

```
ps = conn.prepareStatement(insertQuery);  
ps.setString(1, regno);  
ps.setString(2, name);  
ps.setInt(3, 0);  
ps.executeUpdate();
```

```
%>
```

```
<h3>Welcome, <%= name %> ! You haven't attempted the quiz yet. Please complete  
the quiz below.</h3>
```

```
<form action="submit.jsp" method="post">  
  <input type="hidden" name="name" value="<%= name %>">  
  <input type="hidden" name="regno" value="<%= regno %>">
```

```
<p>1. Who is the highest run-scorer in international cricket?</p>
```

```
<input type="radio" id="tendulkar" name="q1" value="Sachin Tendulkar"
```

```
required>
```

```
<label for="tendulkar">Sachin Tendulkar</label><br>
```

```
<input type="radio" id="kohli" name="q1" value="Virat Kohli">
```

```
<label for="kohli">Virat Kohli</label><br>
```

```
<input type="radio" id="ponting" name="q1" value="Ricky Ponting">
```

```
<label for="ponting">Ricky Ponting</label><br><br>
```

```
<p>2. Which team won the ICC Cricket World Cup in 2019?</p>
```

```
<input type="radio" id="newzealand" name="q2" value="New Zealand">
```

```
<label for="newzealand">New Zealand</label><br>
```

```
<input type="radio" id="england" name="q2" value="England" required>
```

```
<label for="england">England</label><br>
```

```
<input type="radio" id="india" name="q2" value="India">
```

```
<label for="india">India</label><br><br>
```

```
<p>3. Who holds the record for the fastest century in ODI cricket?</p>
```

```
<input type="radio" id="gayle" name="q3" value="Chris Gayle">
```

```
<label for="gayle">Chris Gayle</label><br>
```

```
<input type="radio" id="kohli" name="q3" value="Virat Kohli">
```

```
<label for="kohli">Virat Kohli</label><br>
```

```
<input type="radio" id="de_villiers" name="q3" value="AB de Villiers" required>
```

```
<label for="de_villiers">AB de Villiers</label><br><br>
```

```
<p>4. Which bowler has taken the most wickets in Test cricket?</p>
```

```
<input type="radio" id="muralitharan" name="q4" value="Muttiah Muralitharan"
```

```
required>
```

```
<label for="muralitharan">Muttiah Muralitharan</label><br>
```

```
<input type="radio" id="warne" name="q4" value="Shane Warne">
```

```
<label for="warne">Shane Warne</label><br>
<input type="radio" id="mcgrath" name="q4" value="Glenn McGrath">
<label for="mcgrath">Glenn McGrath</label><br><br>
```

```
<p>5. In which year was the first T20 World Cup held?</p>
<input type="radio" id="2005" name="q5" value="2005">
<label for="2005">2005</label><br>
<input type="radio" id="2007" name="q5" value="2007" required>
<label for="2007">2007</label><br>
<input type="radio" id="2010" name="q5" value="2010">
<label for="2010">2010</label><br><br>
```

<p>6. Who was the captain of the Indian cricket team when they won the 1983 World Cup?</p>

```
<input type="radio" id="gavaskar" name="q6" value="Sunil Gavaskar">
<label for="gavaskar">Sunil Gavaskar</label><br>
<input type="radio" id="dhoni" name="q6" value="MS Dhoni">
<label for="dhoni">MS Dhoni</label><br>
<input type="radio" id="kapil" name="q6" value="Kapil Dev" required>
<label for="kapil">Kapil Dev</label><br><br>
```

```
<input type="submit" value="Submit your answers">
<button type="button" onclick="window.location.href='index.html'">
    Back to Home
</button>
```

```
</form>
```

```
<%
    }
} catch (Exception e) {
    out.println("Error: " + e.getMessage());
} finally {
    if (rs != null) rs.close();
    if (ps != null) ps.close();
    if (conn != null) conn.close();
}
%>
```

submit.jsp:

```
<%@ page import="java.sql.*" %>
<%
    String name = request.getParameter("name");
    String regno = request.getParameter("regno");
    String q1 = request.getParameter("q1");
```

RATHINA BHARGHAVI A
953622104082

```
String q2 = request.getParameter("q2");
String q3 = request.getParameter("q3");
String q4 = request.getParameter("q4");
String q5 = request.getParameter("q5");
String q6 = request.getParameter("q6");

int mark = 0;

if ("Sachin Tendulkar".equals(q1)) {
    mark += 5;
}

if ("England".equals(q2)) {
    mark += 5;
}

if ("AB de Villiers".equals(q3)) {
    mark += 5;
}

if ("Muttiah Muralitharan".equals(q4)) {
    mark += 5;
}

if ("2007".equals(q5)) {
    mark += 5;
}

if ("Kapil Dev".equals(q6)) {
    mark += 5;
}

Connection conn = null;
PreparedStatement ps = null;
String url =
"jdbc:mysql://localhost:3306/test?zeroDateTimeBehavior=CONVERT_TO_NULL";
String user = "root";
String password = "Bharghavi@04";

try {
    Class.forName("com.mysql.cj.jdbc.Driver");
    conn = DriverManager.getConnection(url, user, password);

    String updateQuery = "UPDATE stud_data SET mark = ? WHERE regno = ?";
```

```
ps = conn.prepareStatement(updateQuery);
ps.setInt(1, mark);
ps.setString(2, regno);
ps.executeUpdate();
%>
<h3>Quiz submitted successfully !</h3>
<p>Your score : <%= mark %></p>
<button onclick="history.back()">Back</button>
<%
    } catch (Exception e) {
        out.println("Error: " + e.getMessage());
    } finally {
        if (ps != null) ps.close();
        if (conn != null) conn.close();
    }
%>
```

leaderboard.jsp:

```
<%@ page import="java.sql.*" %>
<%
    Connection conn = null;
    PreparedStatement ps = null;
    ResultSet rs = null;
    String url =
"jdbc:mysql://localhost:3306/test?zeroDateTimeBehavior=CONVERT_TO_NULL";
    String user = "root";
    String password = "Bharghavi@04";

    try {
        Class.forName("com.mysql.cj.jdbc.Driver");
        conn = DriverManager.getConnection(url, user, password);

        String query = "SELECT name, regno, mark FROM stud_data ORDER BY mark
DESC";
        ps = conn.prepareStatement(query);
        rs = ps.executeQuery();
%>
<style>
    table {
        width: 50%;
        margin: auto;
        border-collapse: collapse;
    }
```

```
        th, td {
            padding: 10px;
            text-align: center;
            border: 1px solid black;
        }
        th {
            background-color: #f2f2f2;
        }
    </style>

    <h2 style="text-align: center;">SCOREBOARD</h2>
    <table>
        <tr>
            <th>Name</th>
            <th>Registration Number</th>
            <th>Marks</th>
        </tr>
    <%
        while (rs.next()) {
            String studentName = rs.getString("name");
            String studentRegno = rs.getString("regno");
            int studentMark = rs.getInt("mark");
    %>
        <tr>
            <td><%= studentName %></td>
            <td><%= studentRegno %></td>
            <td><%= studentMark %></td>
        </tr>
    <%
        }
    } catch (Exception e) {
        out.println("Error: " + e.getMessage());
    } finally {
        if (rs != null) rs.close();
        if (ps != null) ps.close();
        if (conn != null) conn.close();
    }
    %>
    <button onclick="history.back()">Back</button>
    </table>
```


RATHINA BHARGHAVI A
953622104082

DATABASE:

Database name : test

Table name : stud_data

Fields : regno VARCHAR(30)(PRIMARY KEY) , name VARCHAR(30) , mark INT

	regno	name	mark
*	NULL	NULL	NULL

Welcome to the Quiz!

Name:

Registration Number:

Start Quiz

View Scoreboard

RATHINA BHARGHAVI A
953622104082

Welcome, Bharghavi ! You haven't attempted the quiz yet. Please complete the quiz below.(5 marks for each correct answer)

1. Who is the highest run-scorer in international cricket?

- ☒ Sachin Tendulkar
- ☐ Virat Kohli
- ☐ Ricky Ponting

2. Which team won the ICC Cricket World Cup in 2019?

- ☐ New Zealand
- ☒ England
- ☐ India

3. Who holds the record for the fastest century in ODI cricket?

- ☐ Chris Gayle
- ☐ Virat Kohli
- ☒ AB de Villiers

4. Which bowler has taken the most wickets in Test cricket?

- ☒ Muttiah Muralitharan
- ☐ Shane Warne
- ☐ Glenn McGrath

5. In which year was the first T20 World Cup held?

- ☐ 2005
- ☒ 2007
- ☐ 2010

6. Who was the captain of the Indian cricket team when they won the 1983 World Cup?

- ☐ Sunil Gavaskar
- ☐ MS Dhoni
- ☒ Kapil Dev

Submit your answers

Back to Home

Quiz submitted successfully !

Your score : 30

Back

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953622104082

Welcome to the Quiz!

Name:

Registration Number:

[Start Quiz](#)

[View Scoreboard](#)

You have already attempted the quiz.

Your score : 30



SCOREBOARD

Name	Registration Number	Marks
Bharghavi	953622104082	30
Aishwarya	953622104003	25
Viji	953622104118	20
Deepthi	953622104017	10
Asmitha	953622104013	5

[Back](#)

RATHINA BHARGHAVI A
953622104082

DATABASE:

Result Grid   Filter Rows: <input type="text"/>			
	regno	name	mark
▶	953622104003	Aishwarya	25
	953622104013	Asmitha	5
	953622104017	Deepthi	10
	953622104082	Bharghavi	30
	953622104118	Viji	20
•	NULL	NULL	NULL