**JSP - Database Access**

In this chapter, we will discuss how to access database with JSP. We assume you have good understanding on how JDBC application works. Before starting with database access through a JSP, make sure you have proper JDBC environment setup along with a database.

For more detail on how to access database using JDBC and its environment setup you can go through our [JDBC Tutorial](https://www.tutorialspoint.com/jdbc/index.htm).

To start with basic concept, let us create a table and create a few records in that table as follows −

Create Table

To create the **Employees** table in the EMP database, use the following steps −

Step 1

Open a **Command Prompt** and change to the installation directory as follows −

C:\>

C:\>cd Program Files\MySQL\bin

C:\Program Files\MySQL\bin>

Step 2

Login to the database as follows −

C:\Program Files\MySQL\bin>mysql -u root -p

Enter password: \*\*\*\*\*\*\*\*

mysql>

Step 3

Create the **Employee** table in the **TEST** database as follows − −

mysql> use TEST;

mysql> create table Employees

(

id int not null,

age int not null,

first varchar (255),

last varchar (255)

);

Query OK, 0 rows affected (0.08 sec)

mysql>

Create Data Records

Let us now create a few records in the **Employee** table as follows − −

mysql> INSERT INTO Employees VALUES (100, 18, 'Zara', 'Ali');

Query OK, 1 row affected (0.05 sec)

mysql> INSERT INTO Employees VALUES (101, 25, 'Mahnaz', 'Fatma');

Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Employees VALUES (102, 30, 'Zaid', 'Khan');

Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Employees VALUES (103, 28, 'Sumit', 'Mittal');

Query OK, 1 row affected (0.00 sec)

mysql>

SELECT Operation

Following example shows how we can execute the **SQL SELECT** statement using JTSL in JSP programming −

<%@ page import = "java.io.\*,java.util.\*,java.sql.\*"%>

<%@ page import = "javax.servlet.http.\*,javax.servlet.\*" %>

<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix = "c"%>

<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix = "sql"%>

<html>

<head>

<title>SELECT Operation</title>

</head>

<body>

<sql:setDataSource var = "snapshot" driver = "com.mysql.jdbc.Driver"

url = "jdbc:mysql://localhost/TEST"

user = "root" password = "pass123"/>

<sql:query dataSource = "${snapshot}" var = "result">

SELECT \* from Employees;

</sql:query>

<table border = "1" width = "100%">

<tr>

<th>Emp ID</th>

<th>First Name</th>

<th>Last Name</th>

<th>Age</th>

</tr>

<c:forEach var = "row" items = "${result.rows}">

<tr>

<td><c:out value = "${row.id}"/></td>

<td><c:out value = "${row.first}"/></td>

<td><c:out value = "${row.last}"/></td>

<td><c:out value = "${row.age}"/></td>

</tr>

</c:forEach>

</table>

</body>

</html>

Access the above JSP, the following result will be displayed −

|  |  |  |  |
| --- | --- | --- | --- |
| **Emp ID** | **First Name** | **Last Name** | **Age** |
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Khan | 30 |
| 103 | Sumit | Mittal | 28 |

INSERT Operation

Following example shows how we can execute the SQL INSERT statement using JTSL in JSP programming −

<%@ page import = "java.io.\*,java.util.\*,java.sql.\*"%>

<%@ page import = "javax.servlet.http.\*,javax.servlet.\*" %>

<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix = "c"%>

<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix = "sql"%>

<html>

<head>

<title>JINSERT Operation</title>

</head>

<body>

<sql:setDataSource var = "snapshot" driver = "com.mysql.jdbc.Driver"

url = "jdbc:mysql://localhost/TEST"

user = "root" password = "pass123"/>

<sql:update dataSource = "${snapshot}" var = "result">

INSERT INTO Employees VALUES (104, 2, 'Nuha', 'Ali');

</sql:update>

<sql:query dataSource = "${snapshot}" var = "result">

SELECT \* from Employees;

</sql:query>

<table border = "1" width = "100%">

<tr>

<th>Emp ID</th>

<th>First Name</th>

<th>Last Name</th>

<th>Age</th>

</tr>

<c:forEach var = "row" items = "${result.rows}">

<tr>

<td><c:out value = "${row.id}"/></td>

<td><c:out value = "${row.first}"/></td>

<td><c:out value = "${row.last}"/></td>

<td><c:out value = "${row.age}"/></td>

</tr>

</c:forEach>

</table>

</body>

</html>

Access the above JSP, the following result will be displayed −

|  |  |  |  |
| --- | --- | --- | --- |
| **Emp ID** | **First Name** | **Last Name** | **Age** |
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Khan | 30 |
| 103 | Sumit | Mittal | 28 |
| 104 | Nuha | Ali | 2 |

DELETE Operation

Following example shows how we can execute the **SQL DELETE** statement using JTSL in JSP programming −

<%@ page import = "java.io.\*,java.util.\*,java.sql.\*"%>

<%@ page import = "javax.servlet.http.\*,javax.servlet.\*" %>

<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix = "c"%>

<%@ taglib uri="http://java.sun.com/jsp/jstl/sql" prefix = "sql"%>

<html>

<head>

<title>DELETE Operation</title>

</head>

<body>

<sql:setDataSource var = "snapshot" driver = "com.mysql.jdbc.Driver"

url = "jdbc:mysql://localhost/TEST"

user = "root" password = "pass123"/>

<c:set var = "empId" value = "103"/>

<sql:update dataSource = "${snapshot}" var = "count">

DELETE FROM Employees WHERE Id = ?

<sql:param value = "${empId}" />

</sql:update>

<sql:query dataSource = "${snapshot}" var = "result">

SELECT \* from Employees;

</sql:query>

<table border = "1" width = "100%">

<tr>

<th>Emp ID</th>

<th>First Name</th>

<th>Last Name</th>

<th>Age</th>

</tr>

<c:forEach var = "row" items = "${result.rows}">

<tr>

<td><c:out value = "${row.id}"/></td>

<td><c:out value = "${row.first}"/></td>

<td><c:out value = "${row.last}"/></td>

<td><c:out value = "${row.age}"/></td>

</tr>

</c:forEach>

</table>

</body>

</html>

Access the above JSP, the following result will be displayed −

|  |  |  |  |
| --- | --- | --- | --- |
| **Emp ID** | **First Name** | **Last Name** | **Age** |
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Khan | 30 |

UPDATE Operation

Following example shows how we can execute the **SQL UPDATE** statement using JTSL in JSP programming −

<%@ page import = "java.io.\*,java.util.\*,java.sql.\*"%>

<%@ page import = "javax.servlet.http.\*,javax.servlet.\*" %>

<%@ taglib uri = "http://java.sun.com/jsp/jstl/core" prefix = "c"%>

<%@ taglib uri = "http://java.sun.com/jsp/jstl/sql" prefix = "sql"%>

<html>

<head>

<title>DELETE Operation</title>

</head>

<body>

<sql:setDataSource var = "snapshot" driver = "com.mysql.jdbc.Driver"

url = "jdbc:mysql://localhost/TEST"

user = "root" password = "pass123"/>

<c:set var = "empId" value = "102"/>

<sql:update dataSource = "${snapshot}" var = "count">

UPDATE Employees SET WHERE last = 'Ali'

<sql:param value = "${empId}" />

</sql:update>

<sql:query dataSource = "${snapshot}" var = "result">

SELECT \* from Employees;

</sql:query>

<table border = "1" width = "100%">

<tr>

<th>Emp ID</th>

<th>First Name</th>

<th>Last Name</th>

<th>Age</th>

</tr>

<c:forEach var = "row" items = "${result.rows}">

<tr>

<td><c:out value = "${row.id}"/></td>

<td><c:out value = "${row.first}"/></td>

<td><c:out value = "${row.last}"/></td>

<td><c:out value = "${row.age}"/></td>

</tr>

</c:forEach>

</table>

</body>

</html>

Access the above JSP, the following result will be displayed −

|  |  |  |  |
| --- | --- | --- | --- |
| **Emp ID** | **First Name** | **Last Name** | **Age** |
| 100 | Zara | Ali | 18 |
| 101 | Mahnaz | Fatma | 25 |
| 102 | Zaid | Ali | 30 |