Problem statement: Develop an end to end login application

Features OR Functional Requirements:

1. Create a new account
2. Forgot password
3. Retrieve all user ids
4. Validate the user id

Pre requisite software’s

1. Eclipse
2. JDK
3. Tomcat
4. Any database

Dependencies:

1. servlet-api.jar
2. ojdbc5.jar

Table definition:

Name Null? Type

----------------------------------------- -------- ----------------------------

USERID NUMBER(5)

UNAME VARCHAR2(10)

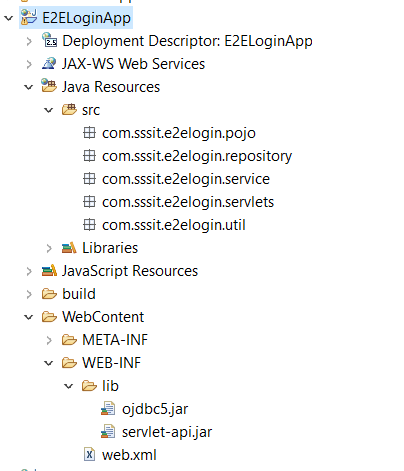
PASSWD VARCHAR2(10)

DB information

User Name : advdec23

Password : advdec23

Folder Structure



Step 1: develop a login html page

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<form action=*"/E2ELoginApp/validate"* method=*"post"*>

<center>

<table>

<tr>

<td> Enter User Name: </td>

<td> <input type=*"text"* name=*"username"*/> </td>

</tr>

<tr>

<td> Enter Password: </td>

<td> <input type=*"password"* name=*"pwd"*/> </td>

</tr>

<tr>

<td colspan=*"2"*> <input type=*"submit"* value=*"Login"*/> </td>

</tr>

</table>

</center>

</form>

<a href=*"register.html"*> Click here to register</a>

<a href=*"forgotpasswd.html"*> Forgot Password</a>

</body>

</html>

Step 2: develop a login pojo class

**package** com.sssit.e2elogin.pojo;

**public** **class** LoginPojo {

**private** **int** userId;

**private** String uName;

**private** String passwd;

**public** **int** getUserId() {

**return** userId;

}

**public** **void** setUserId(**int** userId) {

**this**.userId = userId;

}

**public** String getuName() {

**return** uName;

}

**public** **void** setuName(String uName) {

**this**.uName = uName;

}

**public** String getPasswd() {

**return** passwd;

}

**public** **void** setPasswd(String passwd) {

**this**.passwd = passwd;

}

@Override

**public** String toString() {

**return** "LoginPojo [userId=" + userId + ", uName=" + uName + ", passwd=" + passwd + "]";

}

}

Step 3: develop a util method to get the Connection Object

package com.sssit.e2elogin.util;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.SQLException;

public class JDBCConnection {

private static Connection con = null;

public static final String URL = "jdbc:oracle:thin:@localhost:1521:orcl";

public static final String UNAME = "advdec23";

public static final String PASS = "advdec23";

public static Connection getConnection() {

if(con==null) {

try {

Class.forName("oracle.jdbc.driver.OracleDriver");

con = DriverManager.getConnection(URL, UNAME, PASS);

} catch (ClassNotFoundException e) {

System.out.println("Failed to Load Driver class...");

} catch (SQLException e) {

System.out.println("Failed to Establish connection...");

}

}

return con;

}

}

Step 4: Develop a JDBC program to get the existed credentials from DB

**package** com.sssit.e2elogin.repository;

**import** java.sql.Connection;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** com.sssit.e2elogin.pojo.LoginPojo;

**import** com.sssit.e2elogin.util.JDBCConnection;

**public** **class** LoginRepository {

**public** LoginPojo getCredetialsByUserName(String userName) {

Connection con = **null**;

PreparedStatement pstmt = **null**;

ResultSet rs = **null**;

**try**

{

con = JDBCConnection.*getConnection*();

String SQL\_QUERY = "select \* from login where uname like ?";

pstmt=con.prepareStatement(SQL\_QUERY);

pstmt.setString(1,userName);

rs = pstmt.executeQuery();

rs.next();

LoginPojo login = **new** LoginPojo();

login.setUserId(rs.getInt("userid"));

login.setuName(rs.getString("uname"));

login.setPasswd(rs.getString("passwd"));

System.***out***.println("recieved Data..." + login);

**return** login;

}

**catch** (Exception e) {

System.***out***.println("Exception Caught.....");

}

**return** **null**;

}

}

Step : Develop a Servlet to read the entered credentials from HTML Page and send to respective service method for validation

**package** com.sssit.e2elogin.servlets;

**import** java.io.IOException;

**import** java.io.PrintWriter;

**import** javax.servlet.RequestDispatcher;

**import** javax.servlet.ServletException;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.sssit.e2elogin.pojo.LoginPojo;

**import** com.sssit.e2elogin.repository.LoginRepository;

/\*\*

\* Servlet implementation class CredentialsValidateServlet

\*/

**public** **class** CredentialsValidateServlet **extends** HttpServlet {

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

/\*\*

\* **@see** HttpServlet#HttpServlet()

\*/

**public** CredentialsValidateServlet() {

**super**();

// **TODO** Auto-generated constructor stub

}

/\*\*

\* **@see** HttpServlet#service(HttpServletRequest request, HttpServletResponse response)

\*/

**protected** **void** service(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

PrintWriter pw = response.getWriter();

response.setContentType("text/html");

String userName = request.getParameter("username");

String passwd = request.getParameter("pwd");

LoginRepository repository = **new** LoginRepository();

LoginPojo pojo = repository.getCredetialsByUserName(userName);

**if**(pojo!=**null** && passwd.equals(pojo.getPasswd())) {

pw.println("Welcome to MyApplication");

}

**else**

{

pw.println("<h1>Invalid Credentials</h1>");

RequestDispatcher rd = request.getRequestDispatcher("login.html");

rd.include(request,response);

}

}

}

Feature : Add a new User

Develop a HTML Page

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<form action=*"/E2ELoginApp/register"* method=*"post"*>

<center>

<table>

<tr>

<td> Enter User Name: </td>

<td> <input type=*"text"* name=*"username"*/> </td>

</tr>

<tr>

<td> Enter Password: </td>

<td> <input type=*"password"* name=*"pwd"*/> </td>

</tr>

<tr>

<td colspan=*"2"*> <input type=*"submit"* value=*"Register"*/> </td>

</tr>

</table>

</center>

</form>

</body>

</html>

Step : Develop a Servlet – read the data from HTML and send the data to repository.

**package** com.sssit.e2elogin.servlets;

**import** java.io.IOException;

**import** java.io.PrintWriter;

**import** javax.servlet.RequestDispatcher;

**import** javax.servlet.ServletException;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.sssit.e2elogin.pojo.LoginPojo;

**import** com.sssit.e2elogin.repository.LoginRepository;

/\*\*

\* Servlet implementation class NewUserRegisterServlet

\*/

**public** **class** NewUserRegisterServlet **extends** HttpServlet {

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

/\*\*

\* **@see** HttpServlet#HttpServlet()

\*/

**public** NewUserRegisterServlet() {

**super**();

// **TODO** Auto-generated constructor stub

}

/\*\*

\* **@see** HttpServlet#service(HttpServletRequest request, HttpServletResponse response)

\*/

**protected** **void** service(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

PrintWriter pw = response.getWriter();

response.setContentType("text/html");

String userName = request.getParameter("username");

String passwd = request.getParameter("pwd");

LoginRepository repository = **new** LoginRepository();

LoginPojo pojo = **new** LoginPojo();

pojo.setuName(userName);

pojo.setPasswd(passwd);

**boolean** status = repository.addNewUser(pojo);

**if**(status)

pw.println("<h1> user created successfully....</h1>");

**else**

pw.println("<h1> user creation failed ....</h1>");

RequestDispatcher rd = request.getRequestDispatcher("login.html");

rd.include(request,response);

}

}

Step : develop a method in the repository to insert a new user information to login table

package com.sssit.e2elogin.repository;

import java.sql.Connection;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import com.sssit.e2elogin.pojo.LoginPojo;

import com.sssit.e2elogin.util.JDBCConnection;

public class LoginRepository {

public LoginPojo getCredetialsByUserName(String userName) {

Connection con = null;

PreparedStatement pstmt = null;

ResultSet rs = null;

try

{

con = JDBCConnection.getConnection();

String SQL\_QUERY = "select \* from login where uname like ?";

pstmt=con.prepareStatement(SQL\_QUERY);

pstmt.setString(1,userName);

rs = pstmt.executeQuery();

rs.next();

LoginPojo login = new LoginPojo();

login.setUserId(rs.getInt("userid"));

login.setuName(rs.getString("uname"));

login.setPasswd(rs.getString("passwd"));

System.out.println("recieved Data..." + login);

return login;

}

catch (Exception e) {

System.out.println("Exception Caught.....");

}

return null;

}

public boolean addNewUser(LoginPojo pojo) {

Connection con = null;

PreparedStatement pstmt = null;

ResultSet rs = null;

try

{

con = JDBCConnection.getConnection();

String SQL\_QUERY = "insert into login(uname,passwd) values(?,?)";

pstmt=con.prepareStatement(SQL\_QUERY);

pstmt.setString(1,pojo.getuName());

pstmt.setString(2, pojo.getPasswd());

int status = pstmt.executeUpdate();

if(status>0)

return true;

}

catch (Exception e) {

System.out.println("Exception Caught.....");

}

return false;

}

}

Feature : Forgot Password

Step 1: accept the user name from the user

Step 2: validate the username

Step 2.1: if the username is valid, then render another page that allows to update password

Step 2.2: if the user name is not valid, then navigate to login.html with an error message

Forgotpassword.html

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<form action=*"/E2ELoginApp/validateuser"* method=*"post"*>

<center>

<table>

<tr>

<td> Enter User Name: </td>

<td> <input type=*"text"* name=*"username"*/> </td>

</tr>

<tr>

<td colspan=*"2"*> <input type=*"submit"* value=*"Validate User Name"*/> </td>

</tr>

</table>

</center>

</form>

</body>

</html>

validateUserServlet.java

**package** com.sssit.e2elogin.servlets;

**import** java.io.IOException;

**import** java.io.PrintWriter;

**import** javax.servlet.RequestDispatcher;

**import** javax.servlet.ServletException;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.sssit.e2elogin.pojo.LoginPojo;

**import** com.sssit.e2elogin.repository.LoginRepository;

/\*\*

\* Servlet implementation class ValidateUserServlet

\*/

**public** **class** ValidateUserServlet **extends** HttpServlet {

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

/\*\*

\* **@see** HttpServlet#HttpServlet()

\*/

**public** ValidateUserServlet() {

**super**();

// **TODO** Auto-generated constructor stub

}

/\*\*

\* **@see** HttpServlet#service(HttpServletRequest request, HttpServletResponse response)

\*/

**protected** **void** service(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

PrintWriter pw = response.getWriter();

response.setContentType("text/html");

String userName = request.getParameter("username");

LoginRepository repo = **new** LoginRepository();

LoginPojo userDetails = repo.getCredetialsByUserName(userName);

**if**(userDetails!=**null**) {

pw.println("<form action=/E2ELoginApp/updatepassword method=post>");

pw.println("<center>");

pw.println("<table>");

pw.println("<tr>");

pw.println("<td> User Name: pw.println </td>");

pw.println("<td> <input type=text name=username value=" + userName + " readonly=readonly /> </td>");

pw.println("</tr>");

pw.println("<tr>");

pw.println("<td> Enter Password: </td>");

pw.println("<td> <input type=password name=pwd /> </td>");

pw.println("</tr>");

pw.println("<tr>");

pw.println("<td colspan=2> <input type=submit value=Update Password /> </td>");

pw.println("</tr>");

pw.println("</table>");

pw.println("</center>");

pw.println("</form>");

}

**else**

{

pw.println("<h1>Invalid User Name </h1>");

RequestDispatcher rd = request.getRequestDispatcher("login.html");

rd.include(request,response);

}

}

}

UpdatePasswordServlet.java

**package** com.sssit.e2elogin.servlets;

**import** java.io.IOException;

**import** java.io.PrintWriter;

**import** javax.servlet.RequestDispatcher;

**import** javax.servlet.ServletException;

**import** javax.servlet.http.HttpServlet;

**import** javax.servlet.http.HttpServletRequest;

**import** javax.servlet.http.HttpServletResponse;

**import** com.sssit.e2elogin.pojo.LoginPojo;

**import** com.sssit.e2elogin.repository.LoginRepository;

/\*\*

\* Servlet implementation class UpdatePasswordServlet

\*/

**public** **class** UpdatePasswordServlet **extends** HttpServlet {

**private** **static** **final** **long** ***serialVersionUID*** = 1L;

/\*\*

\* **@see** HttpServlet#HttpServlet()

\*/

**public** UpdatePasswordServlet() {

**super**();

// **TODO** Auto-generated constructor stub

}

/\*\*

\* **@see** HttpServlet#service(HttpServletRequest request, HttpServletResponse response)

\*/

**protected** **void** service(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {

PrintWriter pw = response.getWriter();

response.setContentType("text/html");

String userName = request.getParameter("username");

String passwd = request.getParameter("pwd");

LoginPojo userPojo = **new** LoginPojo();

userPojo.setuName(userName);

userPojo.setPasswd(passwd);

LoginRepository repo = **new** LoginRepository();

**boolean** status = repo.updatePasswordByUserName(userPojo);

**if**(status)

pw.println("<h1> Password updated successfully....</h1>");

**else**

pw.println("<h1> update password failed ....</h1>");

RequestDispatcher rd = request.getRequestDispatcher("login.html");

rd.include(request,response);

}

}

Feature: once the user logged into application, we want to display Employee details on the home page

EmployeePojo.java

**package** com.sssit.e2elogin.pojo;

**public** **class** EmployeePojo {

**private** **int** empno;

**private** String eName;

**private** String job;

**private** **int** mgr;

**private** **double** sal;

**private** **double** comm;

**private** **int** deptNo;

**public** **int** getEmpno() {

**return** empno;

}

**public** **void** setEmpno(**int** empno) {

**this**.empno = empno;

}

**public** String geteName() {

**return** eName;

}

**public** **void** seteName(String eName) {

**this**.eName = eName;

}

**public** String getJob() {

**return** job;

}

**public** **void** setJob(String job) {

**this**.job = job;

}

**public** **int** getMgr() {

**return** mgr;

}

**public** **void** setMgr(**int** mgr) {

**this**.mgr = mgr;

}

**public** **double** getSal() {

**return** sal;

}

**public** **void** setSal(**double** sal) {

**this**.sal = sal;

}

**public** **double** getComm() {

**return** comm;

}

**public** **void** setComm(**double** comm) {

**this**.comm = comm;

}

**public** **int** getDeptNo() {

**return** deptNo;

}

**public** **void** setDeptNo(**int** deptNo) {

**this**.deptNo = deptNo;

}

@Override

**public** String toString() {

**return** "EmployeePojo [empno=" + empno + ", eName=" + eName + ", job=" + job + ", mgr=" + mgr + ", sal=" + sal

+ ", comm=" + comm + ", deptNo=" + deptNo + "]";

}

}

EmployeeRepository.java

package com.sssit.e2elogin.repository;

import java.sql.Connection;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.util.ArrayList;

import java.util.List;

import com.sssit.e2elogin.pojo.EmployeePojo;

import com.sssit.e2elogin.pojo.LoginPojo;

import com.sssit.e2elogin.util.JDBCConnection;

public class EmployeeRepository {

public List<EmployeePojo> getEmployeesList(){

List<EmployeePojo> empList = new ArrayList<EmployeePojo>();

Connection con = null;

PreparedStatement pstmt = null;

ResultSet rs = null;

try

{

con = JDBCConnection.getConnection();

String SQL\_QUERY = "select empno,ename,job,mgr,sal,comm,deptno "

+ "from employee";

pstmt=con.prepareStatement(SQL\_QUERY);

rs = pstmt.executeQuery();

while(rs.next()) {

EmployeePojo pojo = new EmployeePojo();

pojo.setEmpno(rs.getInt("empno"));

pojo.seteName(rs.getString("ename"));

pojo.setJob(rs.getString("job"));

pojo.setMgr(rs.getInt("mgr"));

pojo.setSal(rs.getDouble("sal"));

pojo.setComm(rs.getDouble("comm"));

pojo.setDeptNo(rs.getInt("deptno"));

empList.add(pojo);

}

}

catch (Exception e) {

System.out.println("Exception Caught.....");

}

return empList;

}

}

GetEmployeeListServlet.java

package com.sssit.e2elogin.servlets;

import java.io.IOException;

import java.io.PrintWriter;

import java.util.List;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import com.sssit.e2elogin.pojo.EmployeePojo;

import com.sssit.e2elogin.repository.EmployeeRepository;

/\*\*

\* Servlet implementation class GetEmployeeListServlet

\*/

public class GetEmployeeListServlet extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public GetEmployeeListServlet() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#service(HttpServletRequest request, HttpServletResponse response)

\*/

protected void service(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

PrintWriter pw = response.getWriter();

response.setContentType("text/html");

EmployeeRepository repo = new EmployeeRepository();

List<EmployeePojo> empList = repo.getEmployeesList();

pw.println("<center>");

pw.println("<table border=3>");

for(EmployeePojo emp : empList) {

pw.println("<tr>");

pw.println("<td>" + emp.getEmpno() + "</td>");

pw.println("<td>" + emp.geteName() + "</td>");

pw.println("<td>" + emp.getJob() + "</td>");

pw.println("<td>" + emp.getMgr() + "</td>");

pw.println("<td>" + emp.getSal() + "</td>");

pw.println("<td>" + emp.getComm() + "</td>");

pw.println("<td>" + emp.getDeptNo() + "</td>");

pw.println("<td><a href=/getemployeebyid?empno=" + emp.getEmpno() + "> Update " + emp.getEmpno() +" </a> </td>");

pw.println("<td><a href=/deleteemployeebyid?empno=" + emp.getEmpno() + "> Delete " + emp.getEmpno() +"</a> </td>");

pw.println("</tr>");

}

pw.println("</table>");

pw.println("</center>");

}

}

Web.xml

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<web-app xmlns:xsi=*"http://www.w3.org/2001/XMLSchema-instance"* xmlns=*"http://java.sun.com/xml/ns/javaee"* xsi:schemaLocation=*"http://java.sun.com/xml/ns/javaee http://java.sun.com/xml/ns/javaee/web-app\_2\_5.xsd"* id=*"WebApp\_ID"* version=*"2.5"*>

<display-name>E2ELoginApp</display-name>

<welcome-file-list>

<welcome-file>index.html</welcome-file>

<welcome-file>index.htm</welcome-file>

<welcome-file>index.jsp</welcome-file>

<welcome-file>default.html</welcome-file>

<welcome-file>default.htm</welcome-file>

<welcome-file>default.jsp</welcome-file>

</welcome-file-list>

<servlet>

<description></description>

<display-name>CredentialsValidateServlet</display-name>

<servlet-name>CredentialsValidateServlet</servlet-name>

<servlet-class>com.sssit.e2elogin.servlets.CredentialsValidateServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>CredentialsValidateServlet</servlet-name>

<url-pattern>/validate</url-pattern>

</servlet-mapping>

<servlet>

<description></description>

<display-name>NewUserRegisterServlet</display-name>

<servlet-name>NewUserRegisterServlet</servlet-name>

<servlet-class>com.sssit.e2elogin.servlets.NewUserRegisterServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>NewUserRegisterServlet</servlet-name>

<url-pattern>/register</url-pattern>

</servlet-mapping>

<servlet>

<description></description>

<display-name>ValidateUserServlet</display-name>

<servlet-name>ValidateUserServlet</servlet-name>

<servlet-class>com.sssit.e2elogin.servlets.ValidateUserServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>ValidateUserServlet</servlet-name>

<url-pattern>/validateuser</url-pattern>

</servlet-mapping>

<servlet>

<description></description>

<display-name>UpdatePasswordServlet</display-name>

<servlet-name>UpdatePasswordServlet</servlet-name>

<servlet-class>com.sssit.e2elogin.servlets.UpdatePasswordServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>UpdatePasswordServlet</servlet-name>

<url-pattern>/updatepassword</url-pattern>

</servlet-mapping>

<servlet>

<description></description>

<display-name>GetEmployeeListServlet</display-name>

<servlet-name>GetEmployeeListServlet</servlet-name>

<servlet-class>com.sssit.e2elogin.servlets.GetEmployeeListServlet</servlet-class>

</servlet>

<servlet-mapping>

<servlet-name>GetEmployeeListServlet</servlet-name>

<url-pattern>/employeelist</url-pattern>

</servlet-mapping>

</web-app>