**Java Assignment Day 14**

**Assignment – Day 14**

**Time 90 mins**

**Case Study: Banking Application**

A staff member can deposit or withdraw cash on behalf of the customer based on his/her account number. Each of these transactions are to be stored in the table **bankusertransaction**.

The **account\_info\_table** maintains one record which always stores the current/latest balance forthat particular account. These details are updated in the appropriate table using the servlet and the model class(**AccountOperation**) given below.

Http being a stateless protocol, when multiple interactions happen between the same customer and the server, the account no which is entered by the staff member in the first form is not available when the deposit/withdrawal information is entered. So the account no. is stored as an attribute in an HttpSession object.

**Manager Login :**

Html and jsp Code for creation of ‘New Account for Existing Customer’ is given in detail:

**Manager Login:**

Code for disabling Customer is given in detail:

**Staff Login:**

* A staff member can deposit or withdraw cash on behalf of the customer based on his/her account number.
* Each of these transactions are stored in the appropriate table.

Below code shows the Customer Account Status(mini statement) and processing of deposit and withdrawing the money.

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body>

<form action=*"LoginServlet"* method=*"post"* >

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

password <input type=*"password"* name=*"pass"*/>

<input type=*"submit"* value=*"Login"* />

</form>

</body>

</html>

**package** com.verizon.day5.model;

**public** **class** BankCustomer {

**int** custId;

String custName;

**int** accNo;

**double** Balance;

**public** **int** getCustId() {

**return** custId;

}

**public** **void** setCustId(**int** custId) {

**this**.custId = custId;

}

**public** String getCustName() {

**return** custName;

}

**public** **void** setCustName(String custName) {

**this**.custName = custName;

}

**public** **int** getAccNo() {

**return** accNo;

}

**public** **void** setAccNo(**int** accNo) {

**this**.accNo = accNo;

}

**public** **double** getBalance() {

**return** Balance;

}

**public** **void** setBalance(**double** balance) {

Balance = balance;

}

**public** BankCustomer(**int** custId, String custName, **int** accNo, **double** balance) {

**super**();

**this**.custId = custId;

**this**.custName = custName;

**this**.accNo = accNo;

Balance = balance;

}

**public** BankCustomer() {

**super**();

}

}

**package** com.verizon.day5.DAO;

**import** java.sql.Connection;

**import** java.sql.DriverManager;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.util.ArrayList;

**import** java.util.List;

**import** com.verizon.day5.model.BankCustomer;

**import** com.verizon.day5.model.User;

**public** **class** BankCustomerDAO {

Connection con;

**public** BankCustomerDAO() {

**try** {

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

con=DriverManager.*getConnection*("jdbc:oracle:thin:@localhost:1521:orcl","hr","Admin");

} **catch** (ClassNotFoundException e) {

e.printStackTrace();

} **catch** (SQLException e) {

e.printStackTrace();

}

}

**public** List<BankCustomer> getAllCustomers()

{

**try**{

PreparedStatement pst=con.prepareStatement("select \* from bankcustomer");

ResultSet rs=pst.executeQuery();

List<BankCustomer> bcList =**new** ArrayList<>();

**while**(rs.next())

{

BankCustomer bc=**new** BankCustomer();

bc.setCustId(rs.getInt(1));

bc.setCustName(rs.getString(2));

bc.setAccNo(rs.getInt(3));

bc.setBalance(rs.getDouble(4));

bcList.add(bc);

}

**return** bcList;

}

**catch** (SQLException e) {

e.printStackTrace();

}

**return** **null**;

}

**public** BankCustomer getCustomerDetails(**int** accNo)

{

**try**{

PreparedStatement pst =con.prepareStatement("select \* from bankcustomer where accNo=?");

pst.setInt(1, accNo);

ResultSet rs=pst.executeQuery();

BankCustomer bc=**new** BankCustomer();

**if**(rs.next())

{

bc.setCustId(rs.getInt(1));

bc.setCustName(rs.getString(2));

bc.setAccNo(rs.getInt(3));

bc.setBalance(rs.getDouble(4));

}

**return** bc;

}

**catch** (SQLException e) {

e.printStackTrace();

}

**return** **null**;

}

**public** **boolean** withdraw(**int** accno ,**double** amt) **throws** Exception{

**try**{

BankCustomer b1=getCustomerDetails(accno);

**if**(b1.getBalance() >amt)

{

PreparedStatement pst=con.prepareStatement("update bankcustomer set balance=balance-? where accno=?");

pst.setDouble(1,amt);

pst.setInt(2, accno);

**int** rows=pst.executeUpdate();

**if**(rows>0)

**return** **true**; **else**

{

**throw** **new** Exception("Insufficient balance for withdrawal");

}

}

}

**catch** (SQLException e) {

e.printStackTrace();

}

**return** **false**;

}

**public** **boolean** deposit(**int** accno ,**double** amt){

**try**{

BankCustomer b1=getCustomerDetails(accno);

PreparedStatement pst=con.prepareStatement("update bankcustomer set balance=balance+?");

pst.setDouble(1,amt);

pst.setInt(2, accno);

**int** rows=pst.executeUpdate();

**if**(rows>0)

**return** **true**;

}

**catch** (SQLException e) {

e.printStackTrace();

}

**return** **false**;

}

**public** User validateUser(String username,String password) **throws** Exception

{

**try** {

PreparedStatement pst =con.prepareStatement("select \* from USERS where username=? and password=?");

pst.setString(1,username);

pst.setString(2,password);

ResultSet rs=pst.executeQuery();

User u =**new** User();

**if**(rs.next())

{

u.setUsername(rs.getString(1));

u.setPassword(rs.getString(2));

u.setRole(rs.getString(3));

**return** u;

}

**else** {

**throw** **new** Exception ("invalid username or password");

}

}

**catch** ( SQLException e) {

e.printStackTrace();

}

**return** **null**;

}

}

**package** com.verizon.day5.model;

**public** **class** User {

String username;

String password;

String role;

**public** String getUsername() {

**return** username;

}

**public** **void** setUsername(String username) {

**this**.username = username;

}

**public** String getPassword() {

**return** password;

}

**public** **void** setPassword(String password) {

**this**.password = password;

}

**public** String getRole() {

**return** role;

}

**public** **void** setRole(String role) {

**this**.role = role;

}

**public** User(String username, String password, String role) {

**super**();

**this**.username = username;

**this**.password = password;

**this**.role = role;

}

**public** User() {

**super**();

}

}

**package** com.verizon.day5.servlets;

**import** java.io.IOException;

**import** javax.servlet.RequestDispatcher;

**import** javax.servlet.ServletConfig;

**import** javax.servlet.ServletException;

**import** javax.servlet.annotation.WebServlet;

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

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

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

**import** javax.servlet.http.HttpSession;

**import** com.verizon.day5.DAO.BankCustomerDAO;

**import** com.verizon.day5.model.BankCustomer;

**import** com.verizon.day5.model.User;

**import** java.util.List;

@WebServlet("/LoginServlet")

**public** **class** LoginServlet **extends** HttpServlet {

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

BankCustomerDAO dao;

@Override

**public** **void** init(ServletConfig config) **throws** ServletException {

dao=**new** BankCustomerDAO();

}

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

String uname=request.getParameter("uname");

String pass=request.getParameter("pass");

HttpSession session=request.getSession();

**try** {

User user=dao.validateUser(uname, pass);

**if**(user!=**null**)

{

session.setAttribute("user", user);

**if**(user.getRole().equals("S"))

{

List<BankCustomer> allCust=dao.getAllCustomers();

session.setAttribute("allCustomers", allCust);

RequestDispatcher rd=request.getRequestDispatcher("Transact.jsp");

rd.forward(request, response);

}

}

} **catch** (Exception e) {

// **TODO**: handle exception

}

}

}

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*

pageEncoding=*"ISO-8859-1"*%>

<%@page import=*"com.verizon.day5.model.\*,java.util.\*"* %>

<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=ISO-8859-1"*>

<title>Insert title here</title>

</head>

<body bgcolor=*"pink"*>

<% User u=(User)session.getAttribute("user");

List<BankCustomer> customers=(List<BankCustomer>)session.getAttribute("allCustomers");

%>

<h1>Welcome <%= u.getUsername() %></h1>

<table border=*"2"* >

<tr>

<th>CustomerId </th>

<th>customer name </th>

<th>account number </th>

<th> balance </th>

</tr>

<%

**for** (BankCustomer bc:customers)

{

%>

<tr>

<td><%=bc.getCustId() %></td>

<td><%=bc.getCustName() %></td>

<td><%=bc.getAccNo() %></td>

<td><%=bc.getBalance() %></td>

</tr>

<%} %>

</table>

</body>

</html>