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Xiang Yu

Homework 2 Report

CS 5513 – Dr. Le Gruenwald

# Create OBJECT TYPE Query

CREATE TYPE address\_obj AS OBJECT(

street VARCHAR2(200),

city VARCHAR2(200),

state VARCHAR2(2),

zipcode VARCHAR2(20)

)FINAL;

/

CREATE TYPE customer\_obj AS OBJECT(

customer\_name VARCHAR2(32),

address address\_obj

)FINAL;

/

CREATE TYPE software\_obj AS VARRAY(100) OF VARCHAR2(64);

/

CREATE TYPE computer\_obj AS OBJECT(

serial\_no number(5),

speed VARCHAR2(32),

price number(5),

memory VARCHAR2(32),

customer\_name REF customer\_obj,

facturer\_name REF microchip\_manufacturer\_obj,

softwares software\_obj

)NOT FINAL;

/

CREATE TYPE laptop\_obj UNDER computer\_obj(

weight VARCHAR2(32)

);

/

CREATE TYPE desktop\_obj UNDER computer\_obj(

monitor\_type VARCHAR2(32)

);

/

CREATE TYPE microchip\_manufacturer\_obj AS OBJECT(

facturer\_name VARCHAR2(32),

address address\_obj

)FINAL;

/

CREATE TYPE date\_obj AS OBJECT(

month number(2),

year number(4)

)FINAL;

/

CREATE TYPE order\_obj AS OBJECT(

order\_no number(5),

customer\_name REF customer\_obj,

com\_serial\_no REF computer\_obj,

order\_date data\_obj

)FINAL;

/

# Create Table Query

REATE TABLE customer\_tab OF customer\_obj(

PRIMARY KEY(customer\_name)

) OBJECT IDENTIFIER IS PRIMARY KEY;

/

CREATE TABLE computer\_tab OF computer\_obj(

PRIMARY KEY(serial\_no),

FOREIGN KEY(customer\_name) REFERENCES customer\_tab,

FOREIGN KEY(facturer\_name) REFERENCES microchip\_manufacturer\_tab

)OBJECT IDENTIFIER IS PRIMARY KEY;

/

CREATE TABLE microchip\_manufacturer\_tab OF microchip\_manufacturer\_obj(

PRIMARY KEY(facturer\_name)

)OBJECT IDENTIFIER IS PRIMARY KEY;

/

CREATE TABLE order\_tab OF order\_obj(

PRIMARY KEY(order\_no) GENERATED ALWAYS AS IDENTITY,

FOREIGN KEY(customer\_name) REFERENCES customer\_tab,

FOREIGN KEY(com\_serial\_no) REFERENCES computer\_tab

)OBJECT IDENTIFIER IS PRIMARY KEY;

/

CREATE TABLE laptop\_tab OF laptop\_obj(

FOREIGN KEY(customer\_name) REFERENCES customer\_tab,

FOREIGN KEY(facturer\_name) REFERENCES microchip\_manufacturer\_tab

);

/

CREATE TABLE desktop\_tab OF desktop\_obj(

FOREIGN KEY(customer\_name) REFERENCES customer\_tab,

FOREIGN KEY(facturer\_name) REFERENCES microchip\_manufacturer\_tab

);

/

COMMIT;

# Data Handler Class (JDBC)

package WebDB;

import java.sql.\*;

import java.time.ZoneId;

import java.util.Calendar;

import oracle.jdbc.pool.OracleDataSource;

import javax.servlet.http.HttpSession;

import java.util.Date;

public class DataHandler {

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

String userId = "Yu1357";

String password = "KHxv2Vj5";

Connection conn;

Statement stmt;

ResultSet res;

public boolean authenticateUser(String jdbcUrl, String userId, String password, HttpSession session) throws SQLException {

this.jdbcUrl = jdbcUrl;

this.userId = userId;

this.password = password;

try {

OracleDataSource ds = new OracleDataSource();

ds.setURL(jdbcUrl);

conn = ds.getConnection(userId, password);

return true;

}catch(SQLException e) {

System.out.println("Invalid User");

session.setAttribute("loginerrormsg", "Wrong username or password");

this.userId = null;

this.password = null;

return false;

}

}

public Connection getDBConnection() throws SQLException{

final OracleDataSource ds = new OracleDataSource();

ds.setURL(jdbcUrl);

if(conn == null)

conn = ds.getConnection(userId, password);

conn.setAutoCommit(true);

return conn;

}

public boolean insertManufacturer(String name, String street, String city,

String state, String zipcode) throws SQLException {

getDBConnection();

final String sqlInsert = "INSERT INTO microchip\_manufacturer\_tab VALUES(?,address\_obj(?, ?, ?, ?))";

int rowsUpdated = 0;

try(

PreparedStatement stm = conn.prepareStatement(sqlInsert);

){

stm.setString(1,name);

stm.setString(2, street);

stm.setString(3, city);

stm.setString(4, state);

stm.setString(5, zipcode);

rowsUpdated = stm.executeUpdate();

}catch(SQLException e){

e.printStackTrace();

}

return rowsUpdated != 0;

}

public boolean insertLaptop(int cid, String speed, int price, String memory, String cusName, String fName, String[] softwares, String weight) throws SQLException {

getDBConnection();

String softwaresStr = "software\_obj(";

int rows = 0;

for(int i = 0; i < softwares.length - 1; i++)

softwaresStr += "?, ";

if(softwares.length > 0)

softwaresStr += "?";

softwaresStr += ")";

String sqlInsert = "";

if(cusName.length() != 0)

sqlInsert = "INSERT INTO laptop\_tab "

+ "SELECT ?, ?, ?, ?, REF(c), REF(m), " + softwaresStr + ", ? "

+ "FROM microchip\_manufacturer\_tab m, customer\_tab c "

+ "WHERE c.customer\_name = ? AND m.facturer\_name = ?";

else

sqlInsert = "INSERT INTO laptop\_tab "

+ "SELECT ?, ?, ?, ?, null, REF(m), " + softwaresStr + ", ? "

+ "FROM microchip\_manufacturer\_tab m "

+ "WHERE m.facturer\_name = ?";

try (PreparedStatement stmt = conn.prepareStatement(sqlInsert);) {

stmt.setInt(1, cid);

stmt.setString(2, speed);

stmt.setInt(3, price);

stmt.setString(4, memory);

for(int i = 0; i < softwares.length; i++) {

stmt.setString(i + 5, softwares[i]);

}

stmt.setString(5 + softwares.length, weight);

if(cusName.length() > 0 ) {

stmt.setString(6 + softwares.length, cusName);

stmt.setString(7 + softwares.length, fName);

}

else {

stmt.setString(6 + softwares.length, fName);

}

rows = stmt.executeUpdate();

}catch(SQLException e) {

e.printStackTrace();

}

this.insertComputer(cid, speed, price, memory, cusName, fName, softwares);

return rows != 0;

}

public boolean insertDesktop(int cid, String speed, int price, String memory, String cusName, String fName, String[] softwares, String monitor) throws SQLException {

getDBConnection();

String softwaresStr = "software\_obj(";

int rows = 0;

for(int i = 0; i < softwares.length - 1; i++)

softwaresStr += "?, ";

if(softwares.length > 0)

softwaresStr += "?";

softwaresStr += ")";

String sqlInsert = "";

if(cusName.length() != 0) {

sqlInsert = "INSERT INTO desktop\_tab "

+ "SELECT ?, ?, ?, ?, REF(c), REF(m), " + softwaresStr + ", ? "

+ "FROM microchip\_manufacturer\_tab m, customer\_tab c "

+ "WHERE c.customer\_name = ? AND m.facturer\_name = ?";

}

else {

sqlInsert = "INSERT INTO desktop\_tab "

+ "SELECT ?, ?, ?, ?, null, REF(m), " + softwaresStr + ", ? "

+ "FROM microchip\_manufacturer\_tab m "

+ "WHERE m.facturer\_name = ?";

}

try (PreparedStatement stmt = conn.prepareStatement(sqlInsert);

) {

stmt.setInt(1, cid);

stmt.setString(2, speed);

stmt.setInt(3, price);

stmt.setString(4, memory);

for(int i = 0; i < softwares.length; i++) {

stmt.setString(i + 5, softwares[i]);

}

stmt.setString(5 + softwares.length, monitor);

if(cusName.length() > 0 ) {

stmt.setString(6 + softwares.length, cusName);

stmt.setString(7 + softwares.length, fName);

}

else {

stmt.setString(6 + softwares.length, fName);

}

rows = stmt.executeUpdate();

}catch(SQLException e) {

e.printStackTrace();

}

this.insertComputer(cid, speed, price, memory, cusName, fName, softwares);

return rows != 0;

}

public boolean insertComputer(int cid, String speed, int price, String memory, String cusName, String fName, String[] softwares) throws SQLException {

getDBConnection();

String softwaresStr = "software\_obj(";

int rows = 0;

for(int i = 0; i < softwares.length - 1; i++)

softwaresStr += "?, ";

if(softwares.length > 0)

softwaresStr += "?";

softwaresStr += ")";

String sqlInsertCom = "";

if(cusName.length() != 0) {

sqlInsertCom = "INSERT INTO computer\_tab "

+ "SELECT ?, ?, ?, ?, REF(c), REF(m), " + softwaresStr + " "

+ "FROM microchip\_manufacturer\_tab m, customer\_tab c "

+ "WHERE c.customer\_name = ? AND m.facturer\_name = ?";

}

else {

sqlInsertCom = "INSERT INTO computer\_tab "

+ "SELECT ?, ?, ?, ?, null, REF(m), " + softwaresStr + " "

+ "FROM microchip\_manufacturer\_tab m "

+ "WHERE m.facturer\_name = ?";

}

try (

PreparedStatement stmt1 = conn.prepareStatement(sqlInsertCom);) {

stmt1.setInt(1, cid);

stmt1.setString(2, speed);

stmt1.setInt(3, price);

stmt1.setString(4, memory);

for(int i = 0; i < softwares.length; i++) {

stmt1.setString(i + 5, softwares[i]);

}

if(cusName.length() > 0 ) {

stmt1.setString(5 + softwares.length, cusName);

stmt1.setString(6 + softwares.length, fName);

}

else {

stmt1.setString(5 + softwares.length, fName);

}

rows = stmt1.executeUpdate();

}catch(SQLException e) {

e.printStackTrace();

}

return rows != 0;

}

public boolean insertCustomer(String name,String serialNo, String street, String city,

String state, String zipcode) throws SQLException {

getDBConnection();

String sqlInsert = "INSERT INTO customer\_tab VALUES(?,address\_obj(?, ?, ?, ?)) ";

String sqlInsert2 = null;

if(serialNo != null && serialNo.length() > 0)

sqlInsert2 = " INSERT INTO order\_tab SELECT ?, "

+ "REF(c), "

+ "REF(p), "

+ "date\_obj(?,?)"

+ "FROM customer\_tab c, computer\_tab p "

+ "WHERE c.customer\_name = ? AND p.serial\_no = ? ";

int rowsUpdated = 0;

try(

PreparedStatement stm = conn.prepareStatement(sqlInsert);

){

stm.setString(1,name);

stm.setString(2, street);

stm.setString(3, city);

stm.setString(4, state);

stm.setString(5, zipcode);

rowsUpdated = stm.executeUpdate();

if(serialNo.length() != 0) {

try(PreparedStatement stm1 = conn.prepareStatement(sqlInsert2);){

java.util.Date date= new Date();

Calendar cal = Calendar.getInstance();

cal.setTime(date);

int month = cal.get(Calendar.MONTH);

int year = cal.get(Calendar.YEAR);

stm1.setInt(1, Integer.parseInt(serialNo));

stm1.setInt(2, month);

stm1.setInt(3, year);

stm1.setString(4, name);

stm1.setInt(5, Integer.parseInt(serialNo));

stm1.executeUpdate();

}

}

}catch(SQLException e){

e.printStackTrace();

}

return rowsUpdated != 0;

}

public boolean querry4(String serialNo) throws SQLException {

getDBConnection();

int rowsUpdated = 0;

final String sqlInsert = "UPDATE computer\_tab SET customer\_name = (SELECT REF(c) "

+ "FROM customer\_tab c, order\_tab o "

+ "WHERE c.customer\_name = o.customer\_name.customer\_name "

+ "AND o.com\_serial\_no.serial\_no = ?) "

+ "WHERE serial\_no = ?";

try(

PreparedStatement stm = conn.prepareStatement(sqlInsert);

){

stm.setInt(1, Integer.parseInt(serialNo));

stm.setInt(2, Integer.parseInt(serialNo));

rowsUpdated = stm.executeUpdate();

}catch(SQLException e){

e.printStackTrace();

}

return rowsUpdated != 0;

}

public ResultSet getQuerry4Res(String serialNo) throws SQLException {

getDBConnection();

String sql =

"SELECT p.serial\_no, " +

"P.customer\_name.customer\_name " +

"FROM computer\_tab P "

+"WHERE p.serial\_no = ? ";

PreparedStatement stmt1 = conn.prepareStatement(sql);

stmt1.setInt(1, Integer.parseInt(serialNo));

res = stmt1.executeQuery();

return res;

}

public ResultSet getComputerTable() throws SQLException {

getDBConnection();

String sql =

"SELECT c.serial\_no,\r\n" +

" c.speed,\r\n" +

" c.price,\r\n" +

" c.memory,\r\n" +

" c.customer\_name.customer\_name,\r\n" +

" c.facturer\_name.facturer\_name,\r\n" +

" c.softwares\r\n" +

"FROM computer\_tab c";

// Prepare the SQL query.

PreparedStatement stmt = conn.prepareStatement(sql);

//execute the query and store the result in the ResultSet rset

res = stmt.executeQuery();

return res;

}

public ResultSet querry5(int year) throws SQLException {

getDBConnection();

String sql = "SELECT p.serial\_no, "

+ "p.speed, "

+ "p.price, "

+ "p.memory, "

+ "p.customer\_name.customer\_name, "

+ "p.facturer\_name.facturer\_name, "

+ "p.softwares, "

+ "p.weight, "

+ "o.order\_date.month "

+ "FROM laptop\_tab p, order\_tab o "

+ "WHERE p.serial\_no = o.com\_serial\_no.serial\_no "

+ "AND o.order\_date.year = ? ";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, year);

res = stmt.executeQuery();

return res;

}

public ResultSet querry6(String fname) throws SQLException {

getDBConnection();

String sql = "SELECT c.customer\_name, "

+ "c.address.street, "

+ "c.address.city, "

+ "c.address.state, "

+ "c.address.zipcode "

+ "FROM customer\_tab c " +

"WHERE c.customer\_name IN (SELECT p.customer\_name.customer\_name " +

"FROM computer\_tab p "

+ "WHERE p.facturer\_name.facturer\_name = ? ) ";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setString(1, fname);

res = stmt.executeQuery();

return res;

}

public ResultSet querry7() throws SQLException {

getDBConnection();

String sql = "SELECT o.customer\_name.customer\_name, "

+ "p.softwares "

+ "FROM laptop\_tab p, order\_tab o " +

"WHERE p.serial\_no = o.com\_serial\_no.serial\_no ";

PreparedStatement stmt = conn.prepareStatement(sql);

res = stmt.executeQuery();

return res;

}

public ResultSet querry8(int price) throws SQLException {

getDBConnection();

String sql = "SELECT o.customer\_name.customer\_name "

+ "FROM order\_tab o "

+ "WHERE o.com\_serial\_no.serial\_no IN (SELECT p.serial\_no "

+ "FROM desktop\_tab p "

+ "WHERE p.price > ?) ";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, price);

res = stmt.executeQuery();

return res;

}

public ResultSet querry9(int serialNo) throws SQLException {

getDBConnection();

String sql = "SELECT l.softwares\r\n" +

"FROM laptop\_tab l\r\n" +

"WHERE l.serial\_no = ?";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, serialNo);

res = stmt.executeQuery();

return res;

}

public ResultSet querry10(int year) throws SQLException {

getDBConnection();

this.querry10DeleteOrder(year);

this.querry10DeleteLaptop(year);

this.querry10DeleteDesktop(year);

this.querry10DeleteComputer(year);

String sql = "DELETE FROM customer\_tab c\r\n" +

"WHERE c.customer\_name NOT IN (SELECT o.customer\_name.customer\_name\r\n" +

" FROM order\_tab o \r\n" +

" WHERE o.order\_no IN(SELECT k.order\_no FROM order\_tab k WHERE k.order\_date.year > ?))";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, year);

stmt.executeQuery();

String sql1 = "SELECT c.customer\_name, "

+ "c.address.street, "

+ "c.address.city, "

+ "c.address.state, "

+ "c.address.zipcode "

+ "FROM customer\_tab c";

PreparedStatement stmt1 = conn.prepareStatement(sql1);

res = stmt1.executeQuery();

return res;

}

private ResultSet querry10DeleteOrder(int year) throws SQLException {

String sql = "DELETE FROM order\_tab o\r\n" +

"WHERE o.customer\_name.customer\_name IN(SELECT c.customer\_name FROM customer\_tab c\r\n" +

"WHERE c.customer\_name NOT IN (SELECT o.customer\_name.customer\_name\r\n" +

" FROM order\_tab o \r\n" +

" WHERE o.order\_no IN(SELECT k.order\_no FROM order\_tab k WHERE k.order\_date.year > ?)))\r\n";

PreparedStatement stmt1 = conn.prepareStatement(sql);

stmt1.setInt(1, year);

res = stmt1.executeQuery();

return res;

}

private ResultSet querry10DeleteLaptop(int year) throws SQLException {

String sql = "DELETE FROM laptop\_tab c\r\n" +

"WHERE c.customer\_name.customer\_name IN(SELECT c.customer\_name FROM customer\_tab c\r\n" +

"WHERE c.customer\_name NOT IN (SELECT o.customer\_name.customer\_name\r\n" +

" FROM order\_tab o \r\n" +

" WHERE o.order\_no IN(SELECT k.order\_no FROM order\_tab k WHERE k.order\_date.year > ?)))";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, year);

res = stmt.executeQuery();

return res;

}

private ResultSet querry10DeleteDesktop(int year) throws SQLException {

String sql = "DELETE FROM desktop\_tab c\r\n" +

"WHERE c.customer\_name.customer\_name IN(SELECT c.customer\_name FROM customer\_tab c\r\n" +

"WHERE c.customer\_name NOT IN (SELECT o.customer\_name.customer\_name\r\n" +

" FROM order\_tab o \r\n" +

" WHERE o.order\_no IN(SELECT k.order\_no FROM order\_tab k WHERE k.order\_date.year > ?)))";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, year);

res = stmt.executeQuery();

return res;

}

private ResultSet querry10DeleteComputer(int year) throws SQLException {

String sql = "DELETE FROM desktop\_tab c\r\n" +

"WHERE c.customer\_name.customer\_name IN(SELECT c.customer\_name FROM customer\_tab c\r\n" +

"WHERE c.customer\_name NOT IN (SELECT o.customer\_name.customer\_name\r\n" +

" FROM order\_tab o \r\n" +

" WHERE o.order\_no IN(SELECT k.order\_no FROM order\_tab k WHERE k.order\_date.year > ?)))";

PreparedStatement stmt = conn.prepareStatement(sql);

stmt.setInt(1, year);

res = stmt.executeQuery();

return res;

}

public ResultSet getCustomerTable() throws SQLException {

String sql = "SELECT c.customer\_name, "

+ "c.address.street, "

+ "c.address.city, "

+ "c.address.state, "

+ "c.address.zipcode "

+ "FROM customer\_tab c";

PreparedStatement stmt = conn.prepareStatement(sql);

res = stmt.executeQuery();

return res;

}

public ResultSet getDesktopTable() throws SQLException {

String sql = "SELECT c.serial\_no,\r\n" +

" c.speed,\r\n" +

" c.price,\r\n" +

" c.memory,\r\n" +

" c.customer\_name.customer\_name,\r\n" +

" c.facturer\_name.facturer\_name,\r\n" +

" c.softwares,\r\n" +

" c.monitor\_type\r\n" +

"FROM desktop\_tab c";

PreparedStatement stmt = conn.prepareStatement(sql);

res = stmt.executeQuery();

return res;

}

public ResultSet getLaptopTable() throws SQLException {

String sql = "SELECT c.serial\_no,\r\n" +

" c.speed,\r\n" +

" c.price,\r\n" +

" c.memory,\r\n" +

" c.customer\_name.customer\_name,\r\n" +

" c.facturer\_name.facturer\_name,\r\n" +

" c.softwares,\r\n" +

" c.weight\r\n" +

"FROM laptop\_tab c";

PreparedStatement stmt = conn.prepareStatement(sql);

res = stmt.executeQuery();

return res;

}

public ResultSet getManufacturerTable() throws SQLException {

String sql = "SELECT c.facturer\_name,\r\n" +

" c.address.street,\r\n" +

" c.address.city,\r\n" +

" c.address.state, \r\n" +

" c.address.zipcode\r\n" +

"FROM microchip\_manufacturer\_tab c";

PreparedStatement stmt = conn.prepareStatement(sql);

res = stmt.executeQuery();

return res;

}

public ResultSet getOrderTable() throws SQLException {

String sql = "SELECT o.order\_no,\r\n" +

" o.customer\_name.customer\_name,\r\n" +

" o.com\_serial\_no.serial\_no,\r\n" +

" o.order\_date.month,\r\n" +

" o.order\_date.year\r\n" +

"FROM order\_tab o\r\n";

PreparedStatement stmt = conn.prepareStatement(sql);

res = stmt.executeQuery();

return res;

}

}

# Web Page files (JSP)

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

1. pageEncoding=*"ISO-8859-1"*%>
2. <!DOCTYPE html>
3. <html>
4. <head>
5. <meta charset=*"ISO-8859-1"*>
6. <title>Computer Table</title>
7. </head>
8. <body>
9. <%@page import=*"WebDB.DataHandler"*%>
10. <%@ page import=*"java.sql.\*"*%>
11. <%@ page import=*"java.util.\*"*%>
12. <%
14. DataHandler handler = **new** DataHandler();
15. String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";
16. **boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),
17. session.getAttribute("password").toString(), request.getSession(**true**));
18. ResultSet rset = handler.getComputerTable();
20. %>
21. <form action=*'goMenuAction.jsp'* align=*'center'*>
22. <div align=*'center'*><p>&nbsp;</p>
23. <table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>
24. <tr>
25. <th>Serial Number</th>
26. <th>Speed</th>
27. <th>Price</th>
28. <th>Memory</th>
29. <th>Customer Name</th>
30. <th>Manufacturer Name</th>
31. <th>Softwares</th>

34. </tr>
35. <%
37. **while**(rset.next()){
38. Array a = rset.getArray(7);
39. String[] result = (String[])a.getArray();

42. out.println("<tr>");
43. out.println("<td align=\"center\">" + rset.getInt(1) + "</td>");
44. out.println("<td align=\"center\">" + rset.getString(2) + "</td>");
45. out.println("<td align=\"center\">" + rset.getInt(3) + "</td>");
46. out.println("<td align=\"center\">" + rset.getString(4) + "</td>");
47. out.println("<td align=\"center\">" + rset.getString(5) + "</td>");
48. out.println("<td align=\"center\">" + rset.getString(6) + "</td>");
49. out.println("<td align=\"center\">" + Arrays.toString(result) + "</td>");
51. out.println("</tr>");
52. }
54. %>
55. </table>
56. <table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>
57. <tr>
58. <td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>
59. </tr>
60. </table>
61. </div></form>
62. <%
64. %>
65. </body>
66. </html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Customer Table</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

ResultSet rset = handler.getCustomerTable();

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Customer Name</th>

<th>Street</th>

<th>City</th>

<th>State</th>

<th>Zip Code</th>

</tr>

<%

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getString(1) + "</td>");

out.println("<td align=\"center\">" + rset.getString(2) + "</td>");

out.println("<td align=\"center\">" + rset.getString(3) + "</td>");

out.println("<td align=\"center\">" + rset.getString(4) + "</td>");

out.println("<td align=\"center\">" + rset.getString(5) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Desktop Table</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

ResultSet rset = handler.getDesktopTable();

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Serial Number</th>

<th>Speed</th>

<th>Price</th>

<th>Memory</th>

<th>Customer Name</th>

<th>Manufacturer Name</th>

<th>Softwares</th>

<th>Monitor Type</th>

</tr>

<%

**while**(rset.next()){

Array a = rset.getArray(7);

String[] result = (String[])a.getArray();

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getInt(1) + "</td>");

out.println("<td align=\"center\">" + rset.getString(2) + "</td>");

out.println("<td align=\"center\">" + rset.getInt(3) + "</td>");

out.println("<td align=\"center\">" + rset.getString(4) + "</td>");

out.println("<td align=\"center\">" + rset.getString(5) + "</td>");

out.println("<td align=\"center\">" + rset.getString(6) + "</td>");

out.println("<td align=\"center\">" + Arrays.toString(result) + "</td>");

out.println("<td align=\"center\">" + rset.getString(8) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

%>

</body>

</html>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<!DOCTYPE html>

<html>

<head>

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

</head>

<body>

<%

RequestDispatcher req = request.getRequestDispatcher("main\_menu.jsp");

req.include(request, response);

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Insert Customer</title>

</head>

<body>

<h2>Insert a Laptop</h2>

<form action = *"insert\_customer.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter Customer data: </th>

</tr>

<tr>

<td>Customer's Name:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*customer\_name*>

</div></td>

</tr>

<tr>

<td>Computer Serial Number:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*serial\_no*>

</div></td>

</tr>

<tr>

<td>Street:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*street*>

</div></td>

</tr>

<tr>

<td>City:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*city*>

</div></td>

</tr>

<tr>

<td>State:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*state*>

</div></td>

</tr>

<tr>

<td>ZipCode:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*zipcode*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Insert*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html"*; charset=*"UTF-8"*>

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

<%@page import=*"java.sql.ResultSet"*%>

<%@page import=*"java.sql.Array"*%>

<%

**if** (request.getParameter("backbutton") != **null**) {

response.sendRedirect("main\_menu.jsp");

}

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

String customer\_name = request.getParameter("customer\_name");

String serial\_no = request.getParameter("serial\_no");

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

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

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

String zipCode = request.getParameter("zipcode");

Boolean success;

**if**(serial\_no == **null**)

success = handler.insertCustomer(customer\_name, "", street, city, state, zipCode);

success = handler.insertCustomer(customer\_name, serial\_no, street, city, state, zipCode);

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Customer Name</th>

<th>Street</th>

<th>City</th>

<th>State</th>

<th>Zip Code</th>

</tr>

<%

**if**(success){

%>

<tr>

<td align=*\*"center\"> <%= customer\_name %> </td>

<td align=*\*"center\"><%= street %></td>

<td align=*\*"center\"><%= city%></td>

<td align=*\*"center\"><%= state %></td>

<td align=*\*"center\"><%= zipCode%></td>

</tr>

</tr>

<%

}

**else**{

%>

<h2>There was a problem inserting the Customer</h2>

<%

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Insert Laptop</title>

</head>

<body>

<h2>Insert a Laptop</h2>

<form action = *"insert\_desktop.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the desktop data: </th>

</tr>

<tr>

<td>Serial Number:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*serial\_no*>

</div></td>

</tr>

<tr>

<td>Speed:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*speed*>

</div></td>

</tr>

<tr>

<td>Price:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*price*>

</div></td>

</tr>

<tr>

<td>Memory:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*memory*>

</div></td>

</tr>

<tr>

<td>Customer Name:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*customer\_name*>

</div></td>

</tr>

<tr>

<td>Facturer Name:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*facturer\_name*>

</div></td>

</tr>

<tr>

<td>Softwares:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*softwares*>

</div></td>

</tr>

<tr>

<td>Monitor Type:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*monitor\_type*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Insert*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=UTF-8"*>

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

<%@page import=*"java.sql.ResultSet"*%>

<%@page import=*"java.sql.Array"*%>

<%

**if** (request.getParameter("backbutton") != **null**) {

response.sendRedirect("main\_menu.jsp");

}

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

**int** serialid = Integer.parseInt(request.getParameter("serial\_no"));

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

**int** price = Integer.parseInt(request.getParameter("price"));

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

String customerName = request.getParameter("customer\_name");

String facturerName = request.getParameter("facturer\_name");

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

String monitor\_type = request.getParameter("monitor\_type");

**boolean** success;

**if**(customerName == **null** || customerName.length() == 0)

success = handler.insertLaptop(serialid, speed,

price, memory, "", facturerName, softwares.split(","), monitor\_type);

**else**

success = handler.insertLaptop(serialid, speed,

price, memory, customerName, facturerName, softwares.split(","), monitor\_type);

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Serial Number</th>

<th>Speed</th>

<th>Price</th>

<th>Memory</th>

<th>Customer Name</th>

<th>Manufacturer Name</th>

<th>Softwares</th>

<th>Monitor Type</th>

</tr>

<%

**if**(success){

%>

<tr>

<td align=*\*"center\"> <%= serialid %> </td>

<td align=*\*"center\"><%= speed %></td>

<td align=*\*"center\"><%= price%></td>

<td align=*\*"center\"><%= memory %></td>

<td align=*\*"center\"><%= customerName%></td>

<td align=*\*"center\"><%= facturerName%></td>

<td align=*\*"center\"><%= softwares%></td>

<td align=*\*"center\"><%= monitor\_type%></td>

</tr>

<%

}

**else**{

%>

<h2>There was a problem inserting the desktop</h2>

<%

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Insert Laptop</title>

</head>

<body>

<h2>Insert a Laptop</h2>

<form action = *"insert\_laptop.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the laptop data: </th>

</tr>

<tr>

<td>Serial Number:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*serial\_no*>

</div></td>

</tr>

<tr>

<td>Speed:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*speed*>

</div></td>

</tr>

<tr>

<td>Price:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*price*>

</div></td>

</tr>

<tr>

<td>Memory:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*memory*>

</div></td>

</tr>

<tr>

<td>Customer Name:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*customer\_name*>

</div></td>

</tr>

<tr>

<td>Facturer Name:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*facturer\_name*>

</div></td>

</tr>

<tr>

<td>Softwares:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*softwares*>

</div></td>

</tr>

<tr>

<td>Weight:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*weight*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Insert*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html; charset=UTF-8"*>

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

<%@page import=*"java.sql.ResultSet"*%>

<%@page import=*"java.sql.Array"*%>

<%

**if** (request.getParameter("backbutton") != **null**) {

response.sendRedirect("main\_menu.jsp");

}

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

**int** serialid = Integer.parseInt(request.getParameter("serial\_no"));

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

**int** price = Integer.parseInt(request.getParameter("price"));

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

String customerName = request.getParameter("customer\_name");

String facturerName = request.getParameter("facturer\_name");

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

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

**boolean** success;

**if**(customerName == **null** || customerName.length() == 0)

success = handler.insertLaptop(serialid, speed,

price, memory, "", facturerName, softwares.split(","), weight);

**else**

success = handler.insertLaptop(serialid, speed,

price, memory, customerName, facturerName, softwares.split(","), weight);

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Serial Number</th>

<th>Speed</th>

<th>Price</th>

<th>Memory</th>

<th>Customer Name</th>

<th>Manufacturer Name</th>

<th>Softwares</th>

<th>Weight</th>

</tr>

<%

**if**(success){

%>

<tr>

<td align=*\*"center\"> <%= serialid %> </td>

<td align=*\*"center\"><%= speed %></td>

<td align=*\*"center\"><%= price%></td>

<td align=*\*"center\"><%= memory %></td>

<td align=*\*"center\"><%= customerName%></td>

<td align=*\*"center\"><%= facturerName%></td>

<td align=*\*"center\"><%= softwares%></td>

<td align=*\*"center\"><%= weight%></td>

</tr>

<%

}

**else**{

%>

<h2>There was a problem inserting the laptop</h2>

<%

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Insert Microchip Manufacturer</title>

</head>

<body>

<h2>Insert a Microchip Manufacturer</h2>

<form action = *"insert\_manufacturer.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the Microchip Manufacturer data: </th>

</tr>

<tr>

<td>Manufacturer Name:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*manufacturer\_name*>

</div></td>

</tr>

<tr>

<td>Street:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*street*>

</div></td>

</tr>

<tr>

<td>City:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*city*>

</div></td>

</tr>

<tr>

<td>State:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*state*>

</div></td>

</tr>

<tr>

<td>ZipCode:</td>

<td><div style="text-align: *center*">

<input type=*text* name=*zipcode*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Insert*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html"*; charset=*"UTF-8"*>

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

<%@page import=*"java.sql.ResultSet"*%>

<%@page import=*"java.sql.Array"*%>

<%

**if** (request.getParameter("backbutton") != **null**) {

response.sendRedirect("main\_menu.jsp");

}

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

String manufacturerName = request.getParameter("manufacturer\_name");

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

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

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

String zipCode = request.getParameter("zipcode");

Boolean success = handler.insertManufacturer(manufacturerName, street, city, state, zipCode);

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Manufacturer Name</th>

<th>Street</th>

<th>City</th>

<th>State</th>

<th>Zip Code</th>

</tr>

<%

**if**(success){

%>

<tr>

<td align=*\*"center\"> <%= manufacturerName %> </td>

<td align=*\*"center\"><%= street %></td>

<td align=*\*"center\"><%= city%></td>

<td align=*\*"center\"><%= state %></td>

<td align=*\*"center\"><%= zipCode%></td>

</tr>

</tr>

<%

}

**else**{

%>

<h2>There was a problem inserting the Manufacturer</h2>

<%

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Laptop Table</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

ResultSet rset = handler.getLaptopTable();

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Serial Number</th>

<th>Speed</th>

<th>Price</th>

<th>Memory</th>

<th>Customer Name</th>

<th>Manufacturer Name</th>

<th>Softwares</th>

<th>Weight</th>

</tr>

<%

**while**(rset.next()){

Array a = rset.getArray(7);

String[] result = (String[])a.getArray();

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getInt(1) + "</td>");

out.println("<td align=\"center\">" + rset.getString(2) + "</td>");

out.println("<td align=\"center\">" + rset.getInt(3) + "</td>");

out.println("<td align=\"center\">" + rset.getString(4) + "</td>");

out.println("<td align=\"center\">" + rset.getString(5) + "</td>");

out.println("<td align=\"center\">" + rset.getString(6) + "</td>");

out.println("<td align=\"center\">" + Arrays.toString(result) + "</td>");

out.println("<td align=\"center\">" + rset.getString(8) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

%>

</body>

</html>

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

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

<!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>Login</title>

</head>

<body>

<h2 align=*"center"*>

Login with your Oracle Account.

</h2>

<h2 align=*"center"*>

<jsp:useBean id=*"empsbean"* class=*"WebDB.DataHandler"* scope=*"session"*/>

</h2>

<form action=*"login.jsp"* method=*"post"*>

<div align=*"center"*>

<p>&nbsp;</p>

<table style="with: *50%*">

<tr>

<td width=*"38%"*>

<strong>Username:</strong>

</td>

<td width=*"62%"*>

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

</td>

</tr>

<tr>

<td width=*"38%"*>

<strong>Password:</strong>

</td>

<td width=*"62%"*>

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

</td>

</tr>

</table>

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

<p>

&nbsp;

</p>

</div>

</form>

</body>

</html>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<!DOCTYPE html>

<html>

<head>

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

</head>

<body>

<%

DataHandler handler = **new** DataHandler();

String url = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**if**(handler.authenticateUser(url, request.getParameter("username"),

request.getParameter("password"), request.getSession(**true**))){

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

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

**if**(username != **null** && username.length() > 0)

session.setAttribute("username", username);

**if**(password != **null** && password.length() > 0)

session.setAttribute("password", password);

RequestDispatcher req = request.getRequestDispatcher("main\_menu.jsp");

req.include(request, response);

}

**else**{

RequestDispatcher req = request.getRequestDispatcher("login\_form.jsp");

req.include(request, response);

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Oracle DB Home Page</title>

</head>

<body>

<h2>Xiang Yu's Homework 2 Hame Page</h2>

<form action = *"menu\_action.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Querries </th>

</tr>

<tr>

<td>1.Insert a microchip manufacturer</td>

<td><div style="text-align: *center*;">

<input type=*"submit"* name=*querry1* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>2.1 Insert a Laptop</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry2.1* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>2.2 Insert a Desktop</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry2.2* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>3 Insert a Customer</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry3* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>4. Give technical support to a computer ordered by a particular customer</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry4* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>5. Find all laptops ordered by a particular customer in a particular year</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry5* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>6. List all the information of the customer(s) who have technical support for a computer using the microchip manufactured by a particular manufacturer. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry6* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>7. List the names of all customers who ordered a laptop running a particular operating system. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry7* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>8. Find the names of all customers who have bought a desktop that costs more than a particular price. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry8* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>9. Display all the software a particular laptop has. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry9* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>10. Delete all customers who have not made any order since a particular year. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry10* value=*"Go To"*>

</div></td>

</tr>

</table>

<table cellspacing=*"3"* cellpadding=*"2"* border=*"0"*>

<tr>

<td><input type=*"submit"* name=*"customer\_tab"* value=*"Customer Table"*/></td>

<td><input type=*"submit"* name=*"computer\_tab"* value=*"Computer Table"*/></td>

<td><input type=*"submit"* name=*"desktop\_tab"* value=*"Desktop Table"*/></td>

<td><input type=*"submit"* name=*"laptop\_tab"* value=*"Laptop Table"*/></td>

<td><input type=*"submit"* name=*"manufacturer\_tab"* value=*"Manufacturer Table"*/></td>

<td><input type=*"submit"* name=*"order\_tab"* value=*"Order Table"*/></td>

</tr>

<tr>

<td>

<input type=*"submit"* name=*"logoutbutton"* value=*"Logout"*/>

</td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Oracle DB Home Page</title>

</head>

<body>

<h2>Xiang Yu's Homework 2 Hame Page</h2>

<form action = *"menu\_action.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Querries </th>

</tr>

<tr>

<td>1.Insert a microchip manufacturer</td>

<td><div style="text-align: *center*;">

<input type=*"submit"* name=*querry1* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>2.1 Insert a Laptop</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry2.1* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>2.2 Insert a Desktop</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry2.2* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>3 Insert a Customer</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry3* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>4. Give technical support to a computer ordered by a particular customer</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry4* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>5. Find all laptops ordered by a particular customer in a particular year</td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry5* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>6. List all the information of the customer(s) who have technical support for a computer using the microchip manufactured by a particular manufacturer. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry6* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>7. List the names of all customers who ordered a laptop running a particular operating system. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry7* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>8. Find the names of all customers who have bought a desktop that costs more than a particular price. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry8* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>9. Display all the software a particular laptop has. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry9* value=*"Go To"*>

</div></td>

</tr>

<tr>

<td>10. Delete all customers who have not made any order since a particular year. </td>

<td><div style="text-align: *center*">

<input type=*submit* name=*querry10* value=*"Go To"*>

</div></td>

</tr>

</table>

<table cellspacing=*"3"* cellpadding=*"2"* border=*"0"*>

<tr>

<td><input type=*"submit"* name=*"customer\_tab"* value=*"Customer Table"*/></td>

<td><input type=*"submit"* name=*"computer\_tab"* value=*"Computer Table"*/></td>

<td><input type=*"submit"* name=*"desktop\_tab"* value=*"Desktop Table"*/></td>

<td><input type=*"submit"* name=*"laptop\_tab"* value=*"Laptop Table"*/></td>

<td><input type=*"submit"* name=*"manufacturer\_tab"* value=*"Manufacturer Table"*/></td>

<td><input type=*"submit"* name=*"order\_tab"* value=*"Order Table"*/></td>

</tr>

<tr>

<td>

<input type=*"submit"* name=*"logoutbutton"* value=*"Logout"*/>

</td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Manufacturer Table</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

ResultSet rset = handler.getManufacturerTable();

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Microchip Manufacturer Name</th>

<th>Street</th>

<th>City</th>

<th>State</th>

<th>Zip Code</th>

</tr>

<%

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getString(1) + "</td>");

out.println("<td align=\"center\">" + rset.getString(2) + "</td>");

out.println("<td align=\"center\">" + rset.getString(3) + "</td>");

out.println("<td align=\"center\">" + rset.getString(4) + "</td>");

out.println("<td align=\"center\">" + rset.getString(5) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

</head>

<body>

<%

**if**(request.getParameter("querry1") != **null**)

response.sendRedirect("insert\_manufacturer\_form.jsp");

**else** **if**(request.getParameter("querry2.1") != **null**)

response.sendRedirect("insert\_laptop\_form.jsp");

**else** **if**(request.getParameter("querry2.2") != **null**)

response.sendRedirect("insert\_desktop\_form.jsp");

**else** **if**(request.getParameter("querry3") != **null**)

response.sendRedirect("insert\_customer\_form.jsp");

**else** **if**(request.getParameter("querry4") != **null**)

response.sendRedirect("querry4\_form.jsp");

**else** **if**(request.getParameter("querry5") != **null**)

response.sendRedirect("querry5\_form.jsp");

**else** **if**(request.getParameter("querry6") != **null**)

response.sendRedirect("querry6\_form.jsp");

**else** **if**(request.getParameter("querry7") != **null**)

response.sendRedirect("querry7\_form.jsp");

**else** **if**(request.getParameter("querry8") != **null**)

response.sendRedirect("querry8\_form.jsp");

**else** **if**(request.getParameter("querry9") != **null**)

response.sendRedirect("querry9\_form.jsp");

**else** **if**(request.getParameter("querry10") != **null**)

response.sendRedirect("querry10\_form.jsp");

**else** **if**(request.getParameter("customer\_tab") != **null**)

response.sendRedirect("customer\_tab.jsp");

**else** **if**(request.getParameter("computer\_tab") != **null**)

response.sendRedirect("computer\_tab.jsp");

**else** **if**(request.getParameter("desktop\_tab") != **null**)

response.sendRedirect("desktop\_tab.jsp");

**else** **if**(request.getParameter("laptop\_tab") != **null**)

response.sendRedirect("laptop\_tab.jsp");

**else** **if**(request.getParameter("manufacturer\_tab") != **null**)

response.sendRedirect("manufacturer\_tab.jsp");

**else** **if**(request.getParameter("order\_tab") != **null**)

response.sendRedirect("order\_tab.jsp");

**else** **if**(request.getParameter("logoutbutton") != **null**)

response.sendRedirect("login\_form.jsp");

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Order Table</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

ResultSet rset = handler.getOrderTable();

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Order Number</th>

<th>Customer Name</th>

<th>Computer Serial Number</th>

<th>Order Date(MM/YYYY)</th>

</tr>

<%

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getInt(1) + "</td>");

out.println("<td align=\"center\">" + rset.getString(2) + "</td>");

out.println("<td align=\"center\">" + rset.getString(3) + "</td>");

out.println("<td align=\"center\">" + rset.getString(4) + "/" + rset.getString(5) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>DELETION</title>

</head>

<body>

<h2> Delete all customers who have not made any order since a particular year. </h2>

<form action = *"querry10.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the year: </th>

</tr>

<tr>

<td>Year:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*year*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Delection Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<h2>Customer table after Delection </h2>

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

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

ResultSet rset = handler.querry10(Integer.parseInt(year));

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Customer Name</th>

<th>Street</th>

<th>City</th>

<th>State</th>

<th>Zip Code</th>

</tr>

<%

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getString(1) + "</td>");

out.println("<td align=\"center\">" + rset.getString(2) + "</td>");

out.println("<td align=\"center\">" + rset.getString(3) + "</td>");

out.println("<td align=\"center\">" + rset.getString(4) + "</td>");

out.println("<td align=\"center\">" + rset.getString(5) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>4.Give technical support to a computer ordered by a particular customer</title>

</head>

<body>

<h2>4.Give technical support to a computer ordered by a particular customer</h2>

<form action = *"querry4.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the Tech-Support data: </th>

</tr>

<tr>

<td>Computer Serial Number:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*serial\_no*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html"*; charset=*"UTF-8"*>

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

<%@page import=*"java.sql.ResultSet"*%>

<%@page import=*"java.sql.Array"*%>

<h2>4.Give technical support to a computer ordered by a particular customer</h2>

<%

**if** (request.getParameter("backbutton") != **null**) {

response.sendRedirect("main\_menu.jsp");

}

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

String serial\_no = request.getParameter("serial\_no");

**boolean** success = handler.querry4(serial\_no);

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Serial Number</th>

<th>Customer' Name</th>

<th>Customer' Name</th>

<th>Customer' Name</th>

<%

**if**(success){

ResultSet rset = handler.getQuerry4Res(serial\_no);

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getInt(1) + "</td>" +

"<td align=\"center\"> " + rset.getString(2) + "</td> ");

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

}

}

**else**{

%>

<h2>There was a problem executing querry 4</h2>

<%

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Insert Microchip Manufacturer</title>

</head>

<body>

<h2>Find all laptops ordered by a particular customer in a particular year. </h2>

<form action = *"querry5.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the year: </th>

</tr>

<tr>

<td>Year:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*year*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

<meta http-equiv=*"Content-Type"* content=*"text/html"*; charset=*"UTF-8"*>

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<h2>Find all laptops ordered by a particular customer in a particular year. </h2>

<%

**if** (request.getParameter("backbutton") != **null**) {

response.sendRedirect("main\_menu.jsp");

}

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

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

ResultSet rset = handler.querry5(Integer.parseInt(year));

%> <h1>Laptop sold in <%=year %></h1>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Serial Number</th>

<th>Speed</th>

<th>Price</th>

<th>Memory</th>

<th>Customer Name</th>

<th>Manufacturer Name</th>

<th>Softwares</th>

<th>Weight</th>

<th>Order Month:</th>

</tr>

<%

**while**(rset.next()){

Array a = rset.getArray(7);

String[] result = (String[])a.getArray();

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getInt(1) + "</td>" +

"<td align=\"center\"> " + rset.getString(2) + "</td> " +

"<td align=\"center\"> " + rset.getInt(3) + "</td> " +

"<td align=\"center\"> " + rset.getString(4) + "</td> " +

"<td align=\"center\"> " + rset.getString(5) + "</td> " +

"<td align=\"center\"> " + rset.getString(6) + "</td> " +

"<td align=\"center\"> " + Arrays.toString(result) + "</td> " +

"<td align=\"center\"> " + rset.getString(8) + "</td> " +

"<td align=\"center\"> " + rset.getInt(9) + "</td> " );

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Technical support</title>

</head>

<body>

<h2>List all the information of the customer(s) who have technical support for a computer using the microchip manufactured by a particular manufacturer. </h2>

<form action = *"querry6.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the year: </th>

</tr>

<tr>

<td>Microchip Manufacturer Name</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*facturer\_name*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Technical support</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<h2>List all the information of the customer(s) who have technical support for a computer using the microchip manufactured by a particular manufacturer. </h2>

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

String fname = request.getParameter("facturer\_name");

ResultSet rset = handler.querry6(fname);

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Customer Name</th>

<th>Street</th>

<th>City</th>

<th>State</th>

<th>Zip Code</th>

</tr>

<%

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getString(1) + "</td>" +

"<td align=\"center\"> " + rset.getString(2) + "</td> " +

"<td align=\"center\"> " + rset.getString(3) + "</td> " +

"<td align=\"center\"> " + rset.getString(4) + "</td> " +

"<td align=\"center\"> " + rset.getString(5) + "</td> ");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Insert title here</title>

</head>

<body>

<h2>List the names of all customers who ordered a laptop running a particular operating system. </h2>

<form action = *"querry7.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the Operate System Name: </th>

</tr>

<tr>

<td>Operate System Name:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*software*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Customer</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<h2>List the names of all customers who ordered a laptop running a particular operating system. </h2>

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

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

ResultSet rset = handler.querry7();

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Customer Name</th>

</tr>

<%

**while**(rset.next()){

Array a = rset.getArray(2);

String[] result = (String[])a.getArray();

**boolean** check = **false**;

**for**(String s:result){

**if**(s.equals(software)){

check = **true**;

}

}

**if**(!check)

**continue**;

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getString(1) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Customer</title>

</head>

<body>

<h2>Find the names of all customers who have bought a desktop that costs more than a particular price. </h2>

<form action = *"querry8.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the Price: </th>

</tr>

<tr>

<td>Price:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*price*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Query Result</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<h1>Find the names of all customers who have bought a desktop that costs more than a particular price.</h1>

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

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

ResultSet rset = handler.querry8(Integer.parseInt(price));

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Customer Name</th>

</tr>

<%

**while**(rset.next()){

out.println("<tr>");

out.println("<td align=\"center\">" + rset.getString(1) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

%>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>softwares</title>

</head>

<body>

<h2>Display all the software a particular laptop has. </h2>

<form action = *"querry9.jsp"*>

<table border = *1*>

<tr>

<th colspan=*"2"*>Enter the Price: </th>

</tr>

<tr>

<td>Serial Number:</td>

<td><div style="text-align: *center*;">

<input type=*text* name=*serial\_no*>

</div></td>

</tr>

<tr>

<td><div style="text-align: *center*">

<input type=*reset* name=*resetbutton* value=*Clear*>

</div></td>

<td><div style="text-align: *center*">

<input type=*submit* name=*insertbutton* value=*Submit*>

</div></td>

</tr>

<tr>

<td colspan = *2*><div style="text-align: *center*">

<input type=*submit* name=*backbutton* value=*Back*>

</div></td>

</tr>

</table>

</form>

</body>

</html>

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

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

<!DOCTYPE html>

<html>

<head>

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

<title>Customer</title>

</head>

<body>

<%@page import=*"WebDB.DataHandler"*%>

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

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

<h1>Display all the software a particular laptop has.</h1>

<%

DataHandler handler = **new** DataHandler();

String jdbcUrl = "jdbc:oracle:thin:@//oracle18.cs.ou.edu:1521/orclpdb";

**boolean** auth = handler.authenticateUser(jdbcUrl, session.getAttribute("username").toString(),

session.getAttribute("password").toString(), request.getSession(**true**));

**if** (request.getParameter("insertbutton") != **null** && auth) {

String serialNo = request.getParameter("serial\_no");

ResultSet rset = handler.querry9(Integer.parseInt(serialNo));

%>

<form action=*'goMenuAction.jsp'* align=*'center'*>

<div align=*'center'*><p>&nbsp;</p>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'1'* width=*'100%'*>

<tr>

<th>Softwares</th>

</tr>

<%

**while**(rset.next()){

Array a = rset.getArray(1);

String[] result = (String[])a.getArray();

out.println("<tr>");

out.println("<td align=\"center\">" + Arrays.toString(result) + "</td>");

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

}

%>

</table>

<table cellspacing=*'2'* cellpadding=*'3'* border=*'0'* width=*'100%'*>

<tr>

<td><input type=*'submit'* name=*'backbutton'* value=*'Home'*/></td>

</tr>

</table>

</div></form>

<%

}

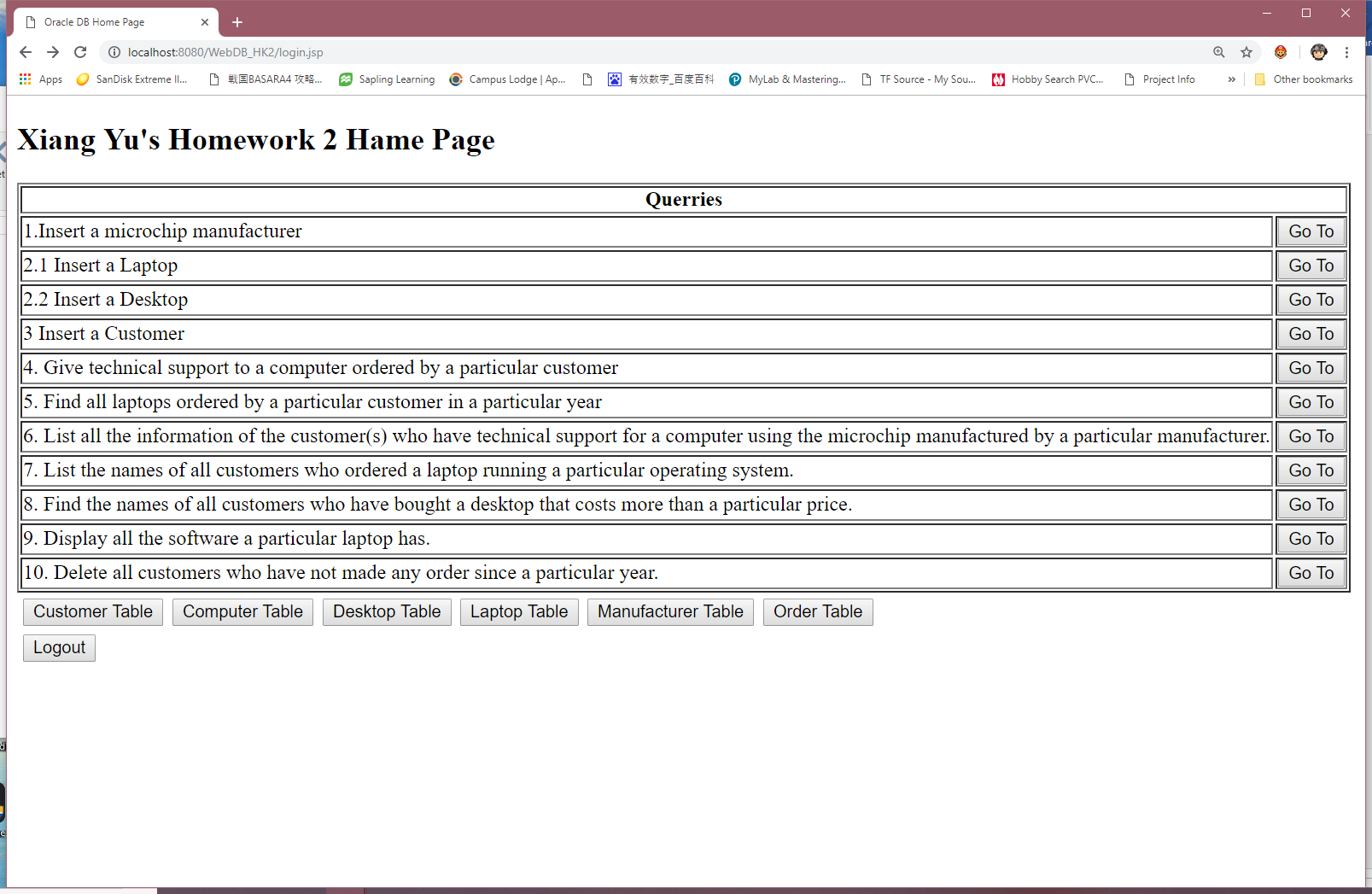
%>

</body>

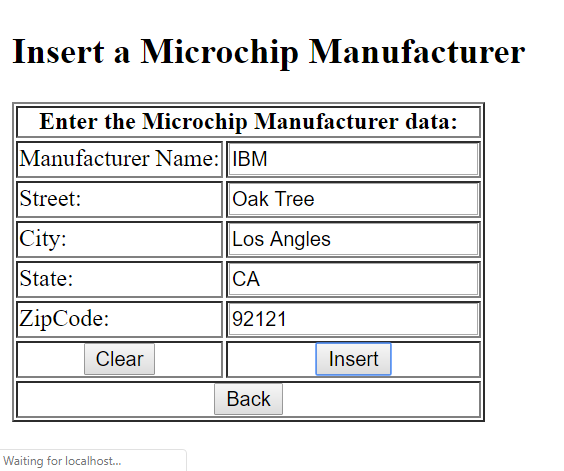
</html>

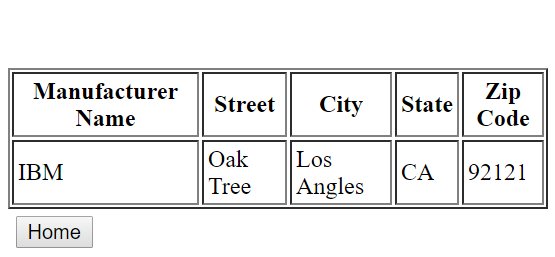
# 5. Screenshot of Query Result

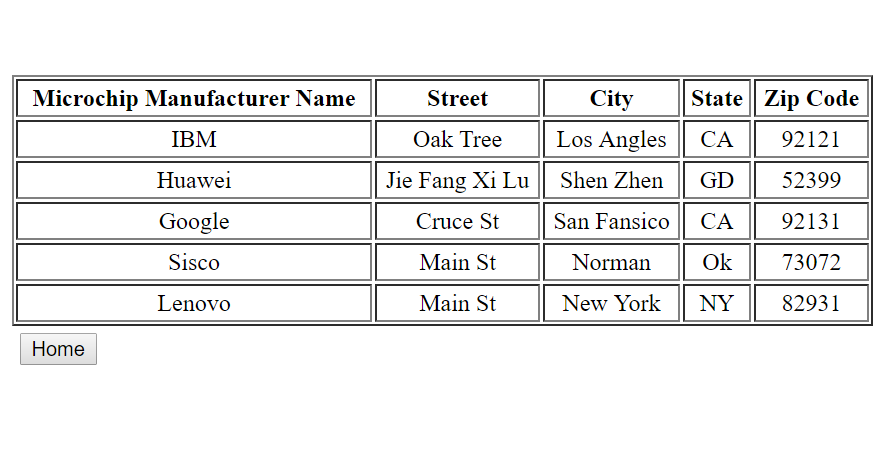
## Home Page



## Query 1

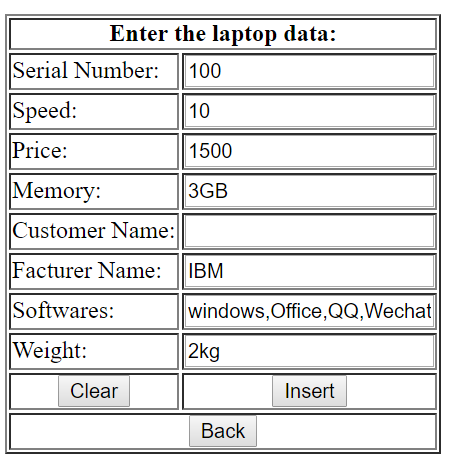




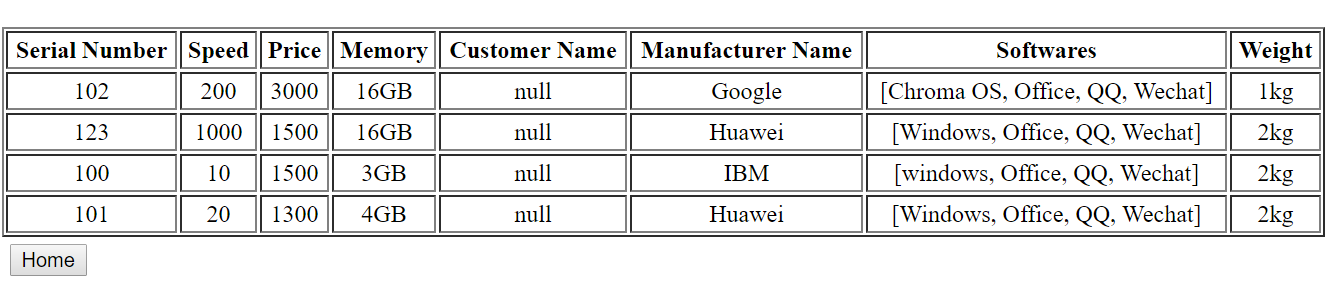


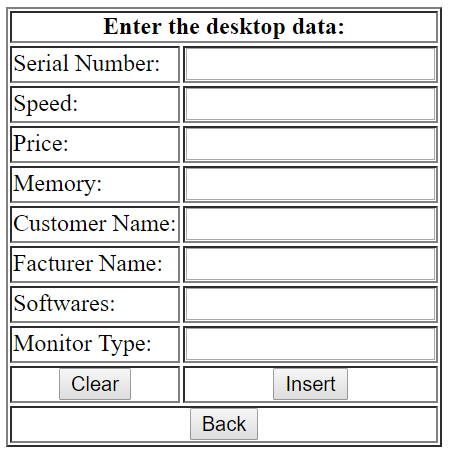
Five Query Result

## Query 2

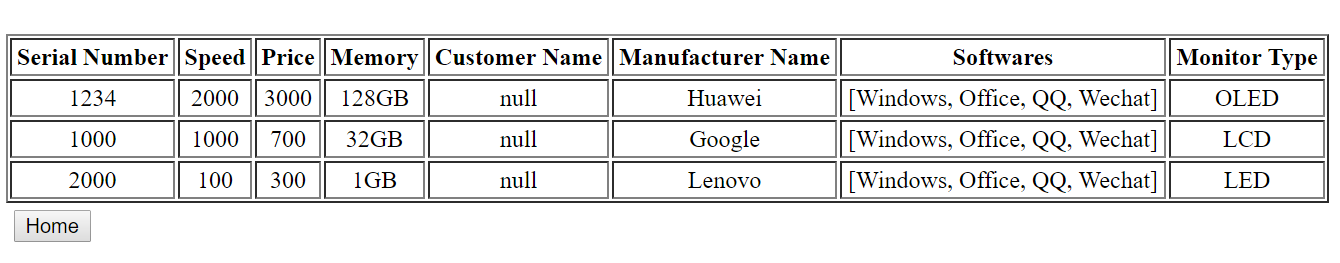


Laptop table

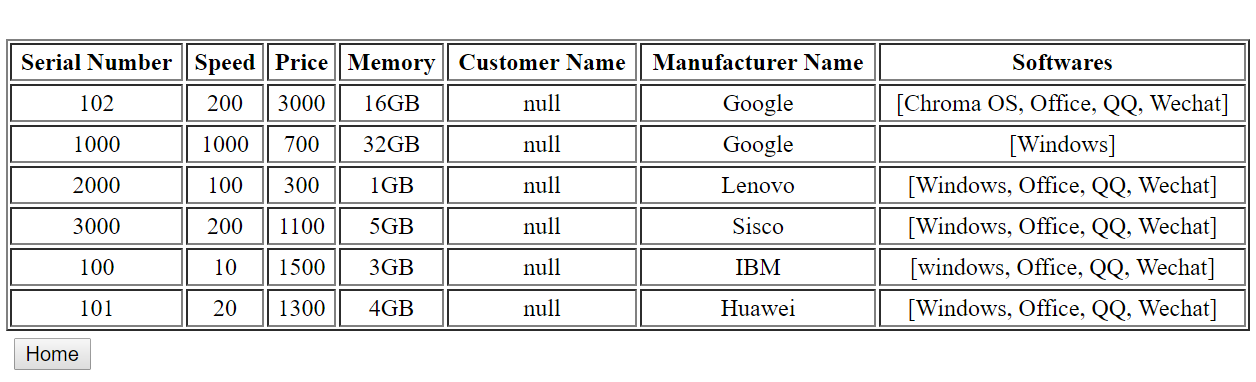




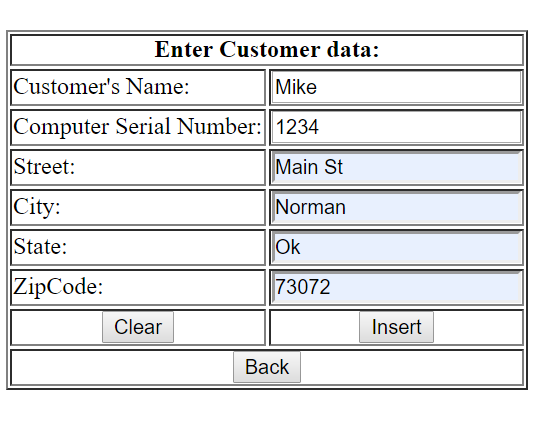
Desktop Table

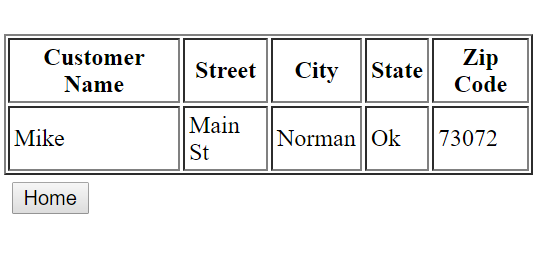


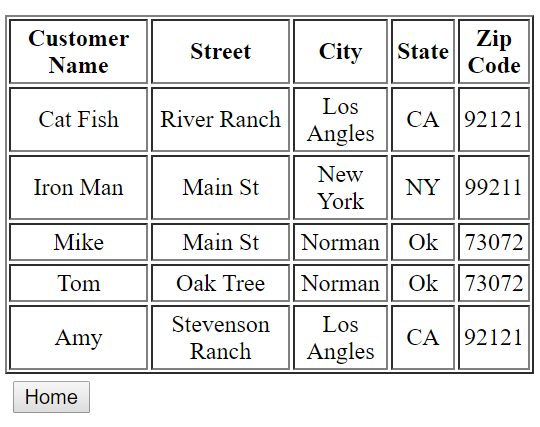
Computer Table



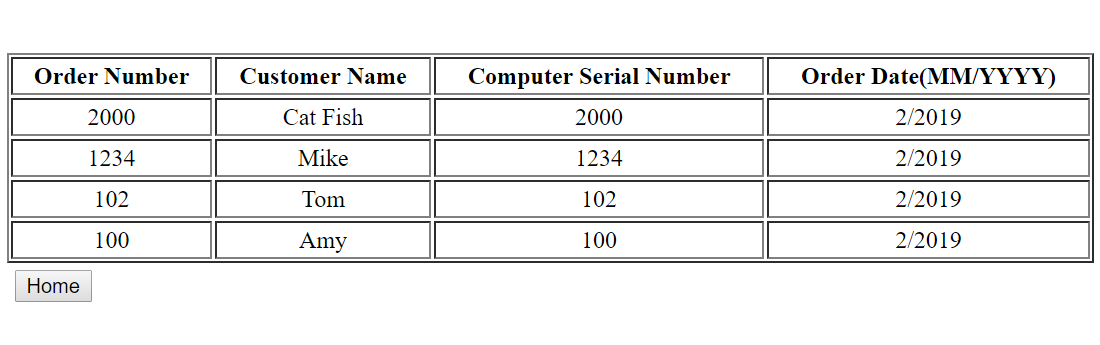
## Query 3



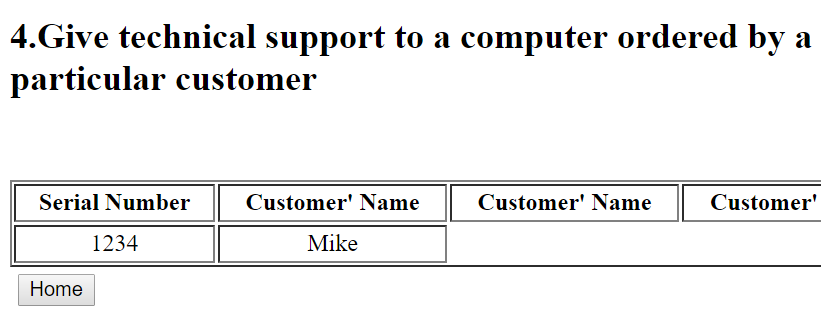
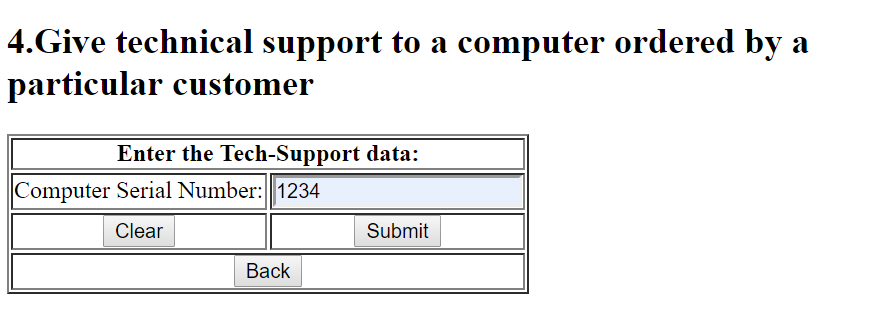


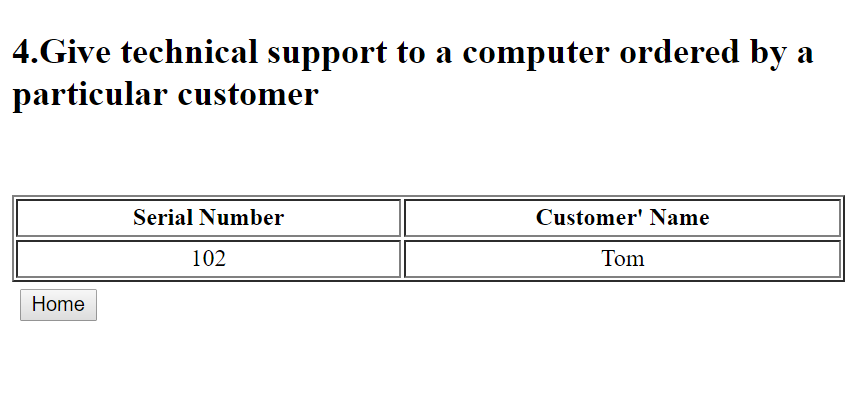
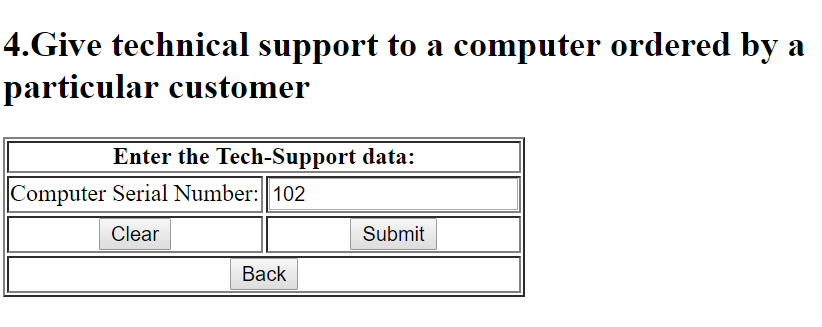


Order Table:

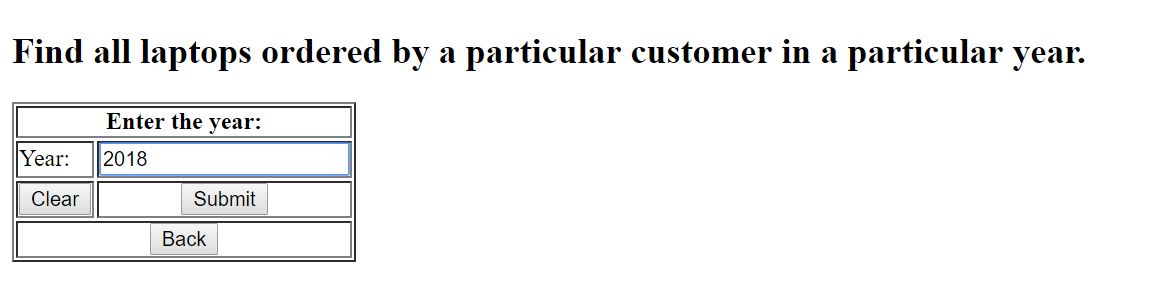


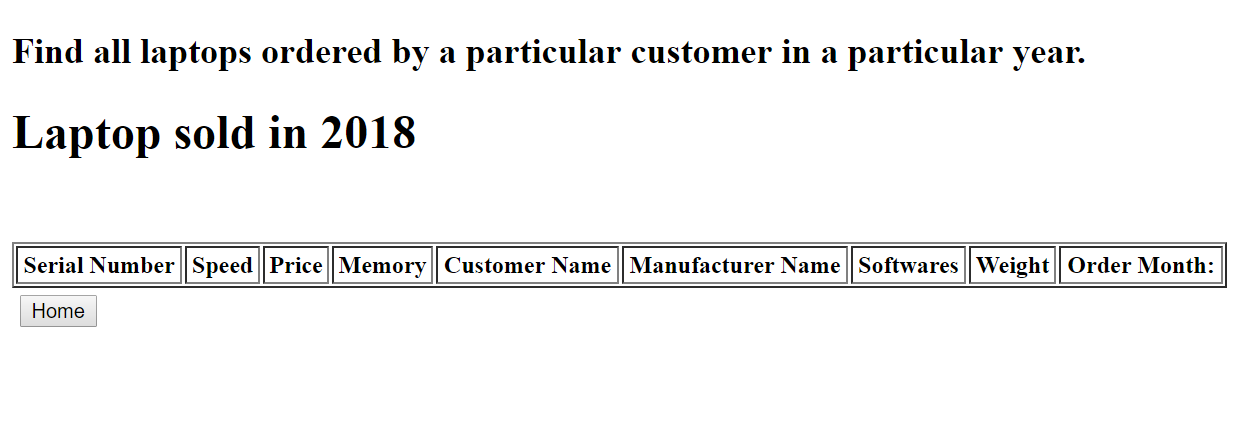
## Query 4

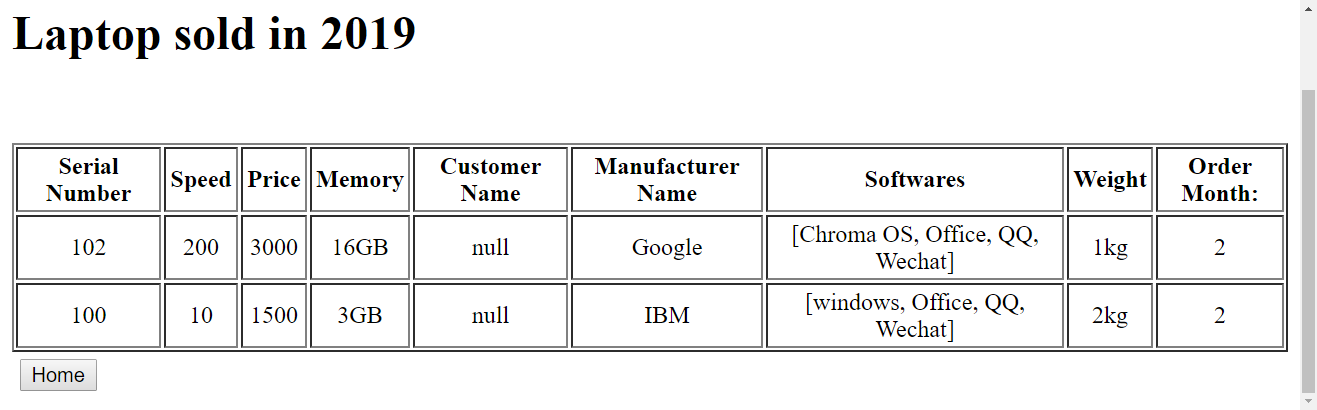
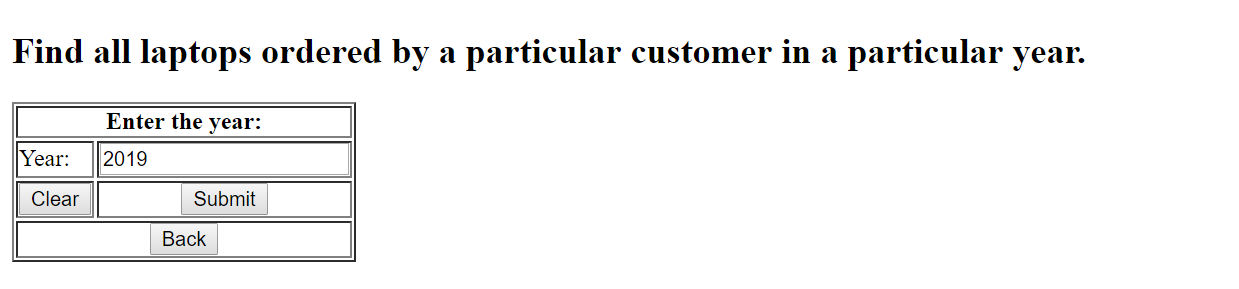




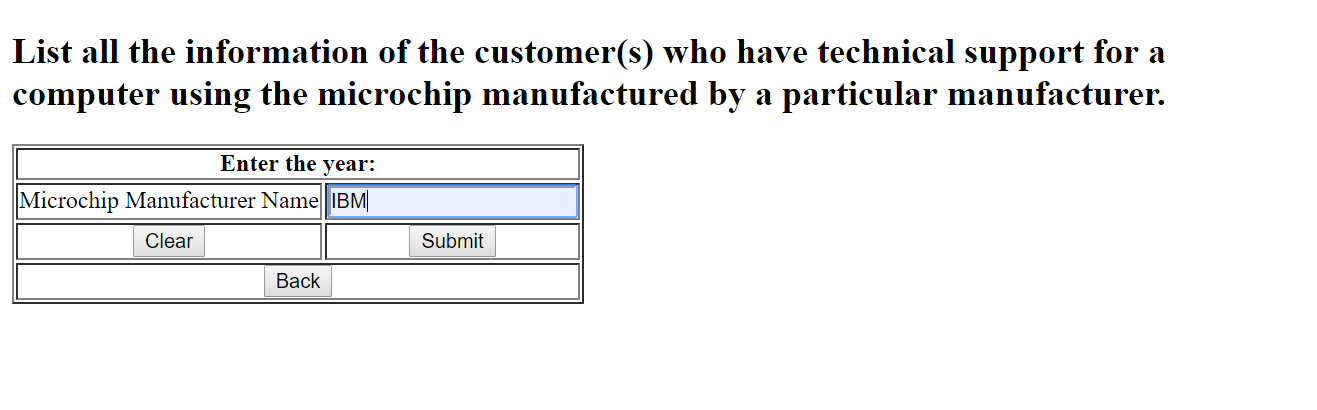
## Query 5

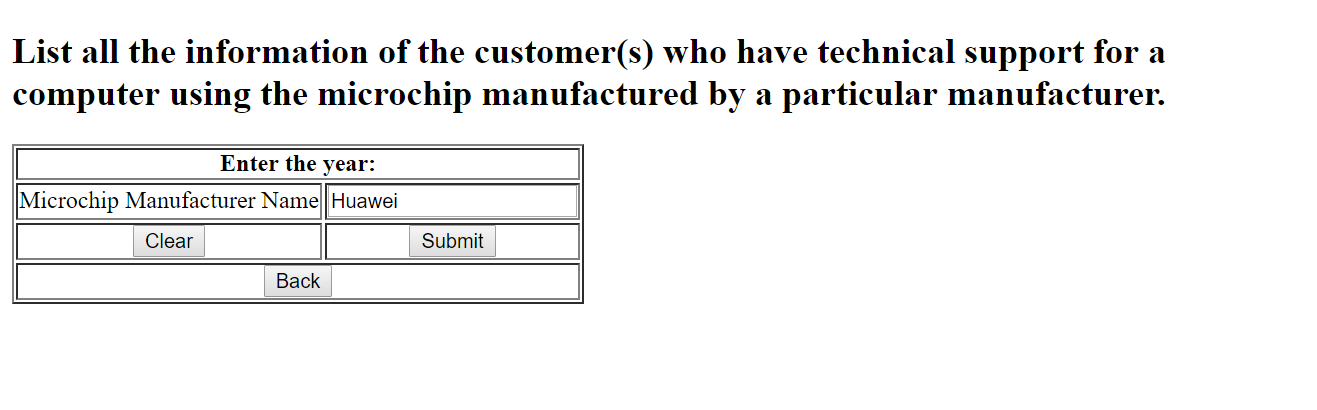
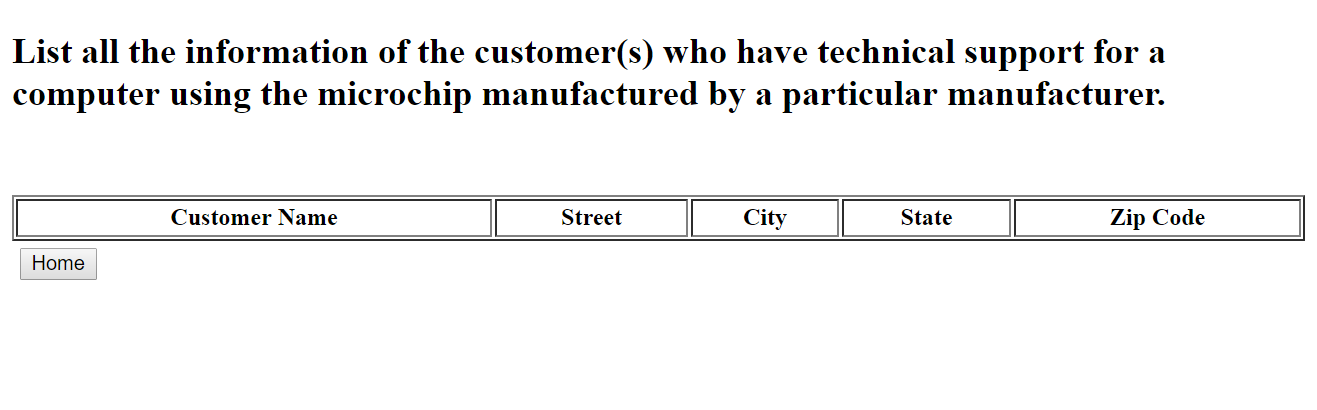


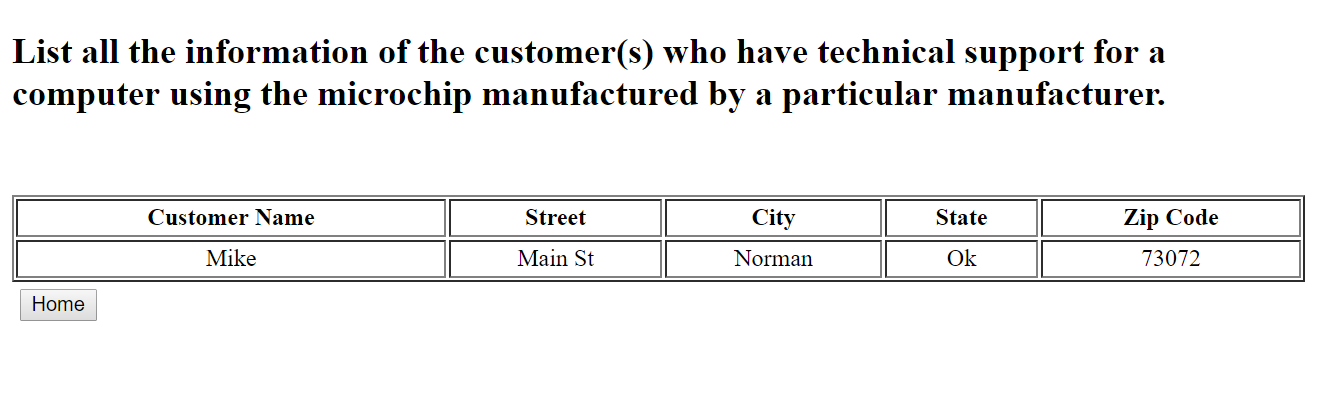




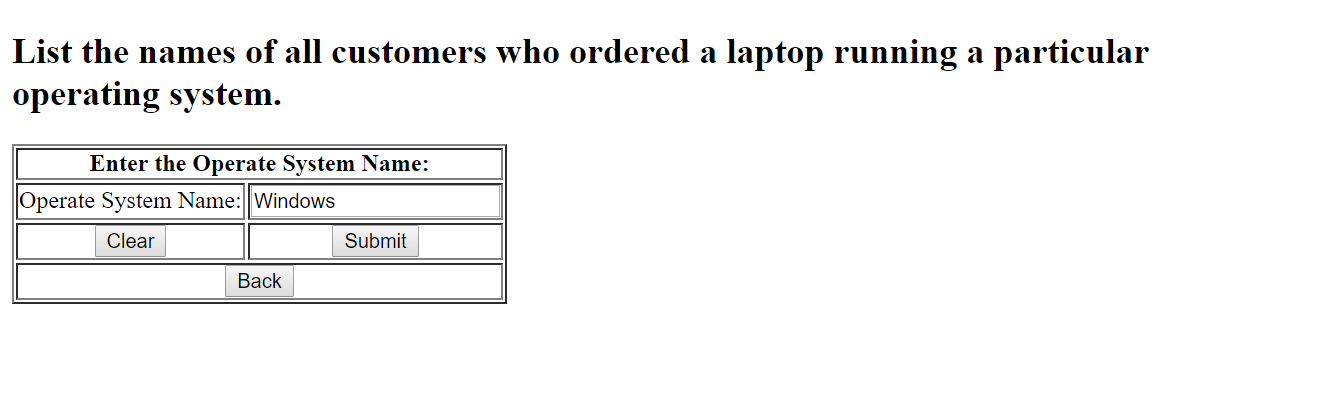
## Query 6

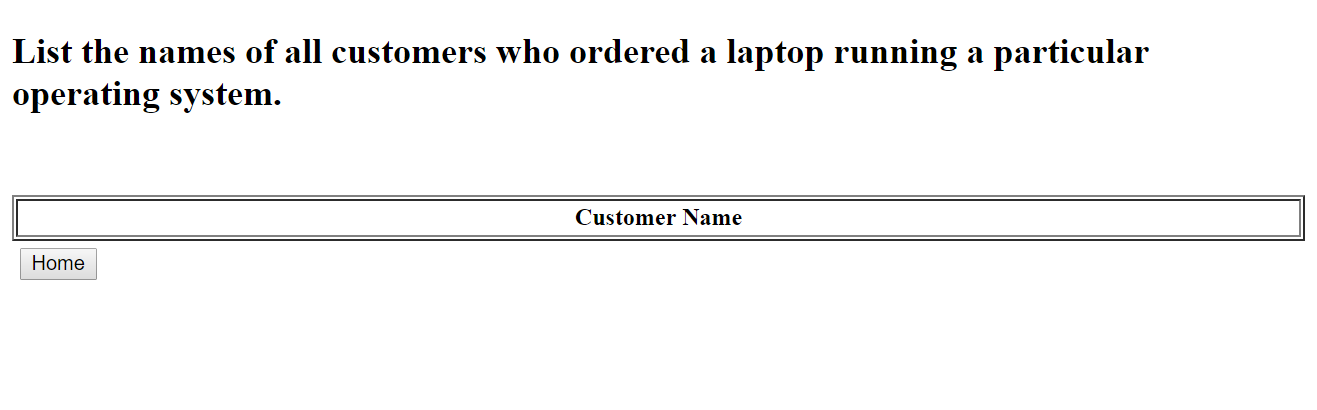


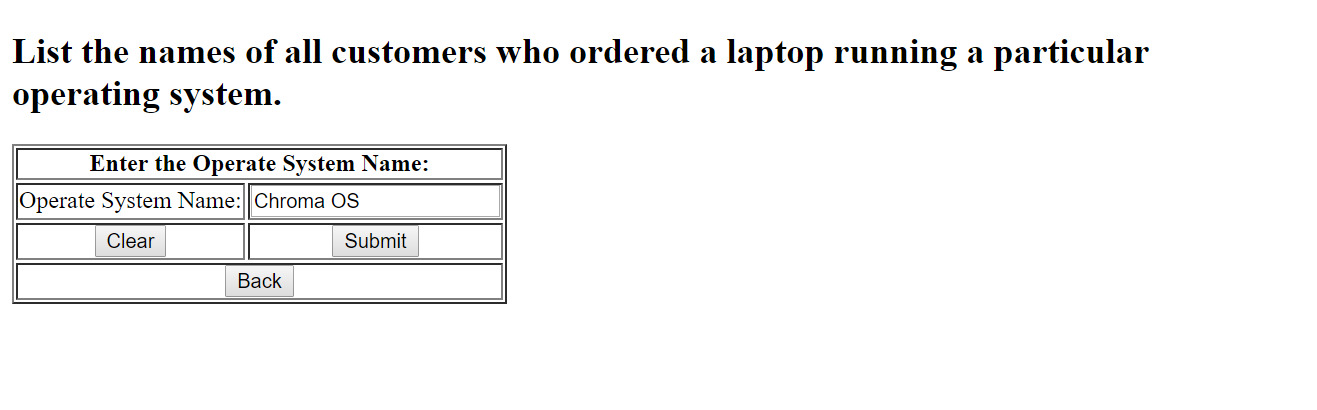


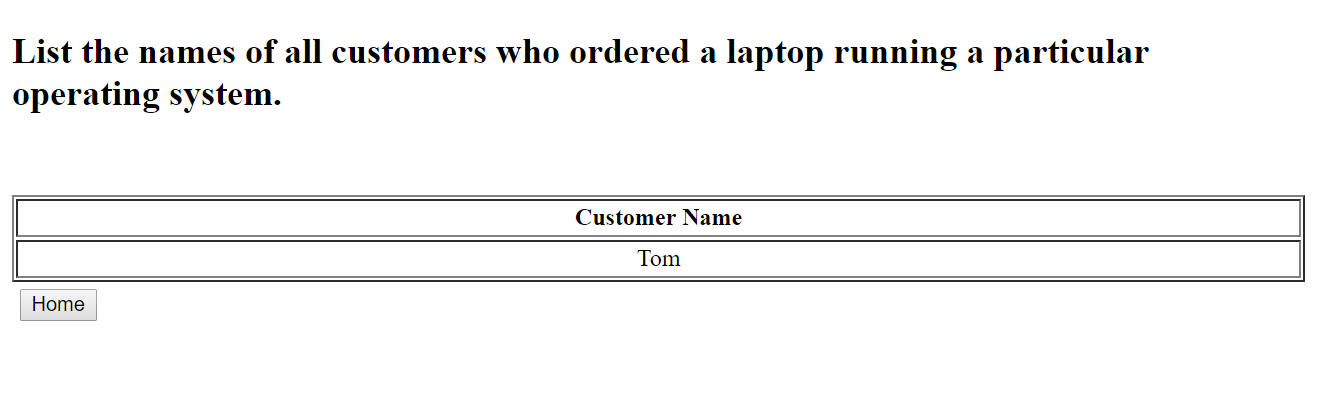


## Query 7

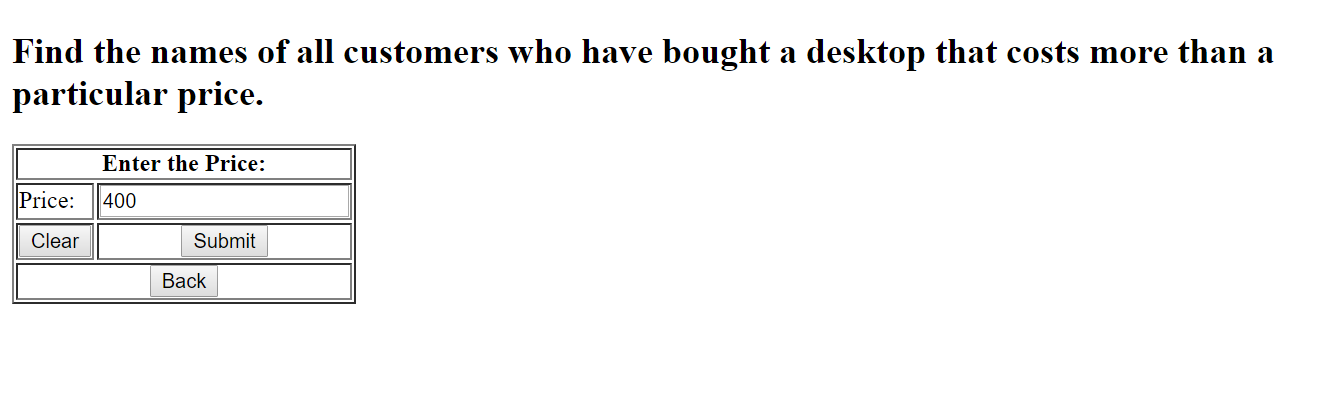


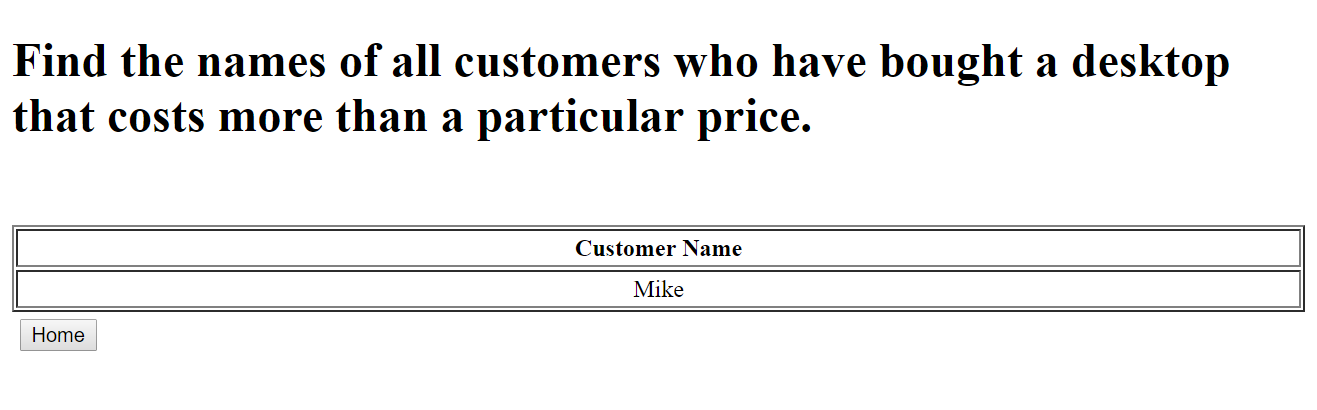


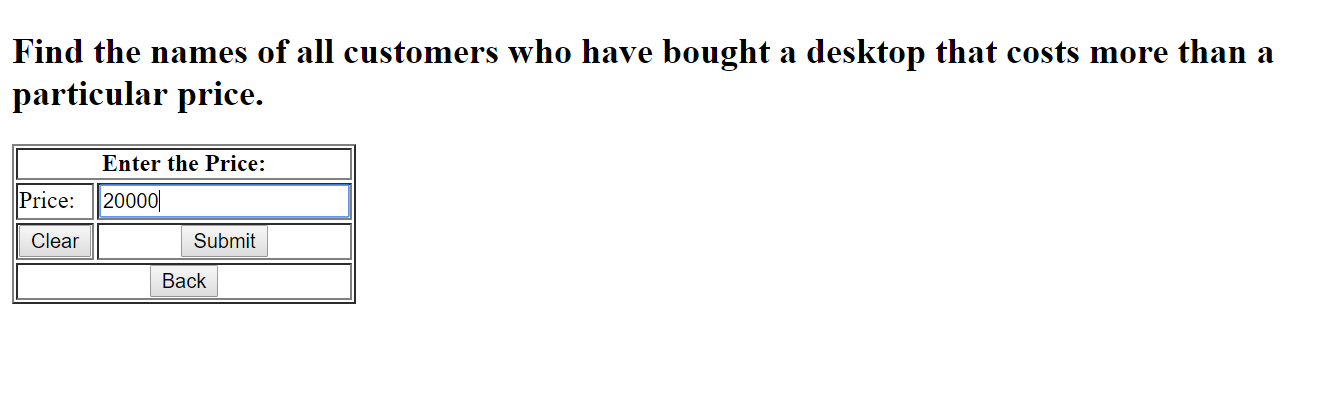


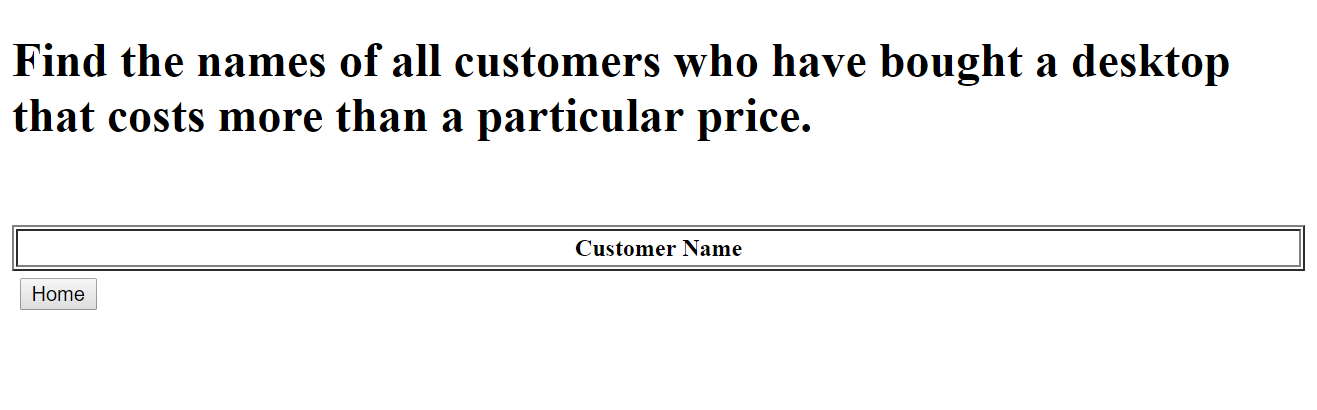


## Query 8

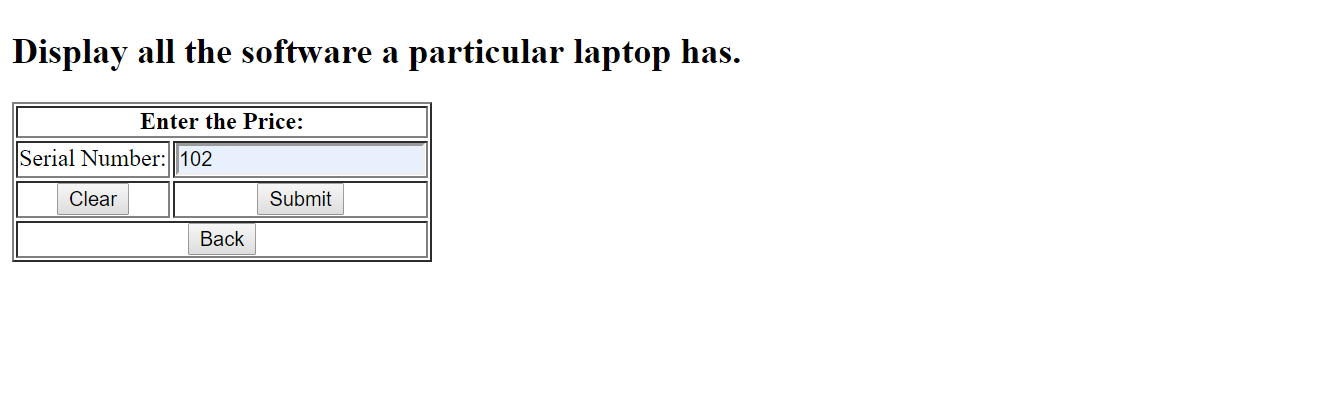


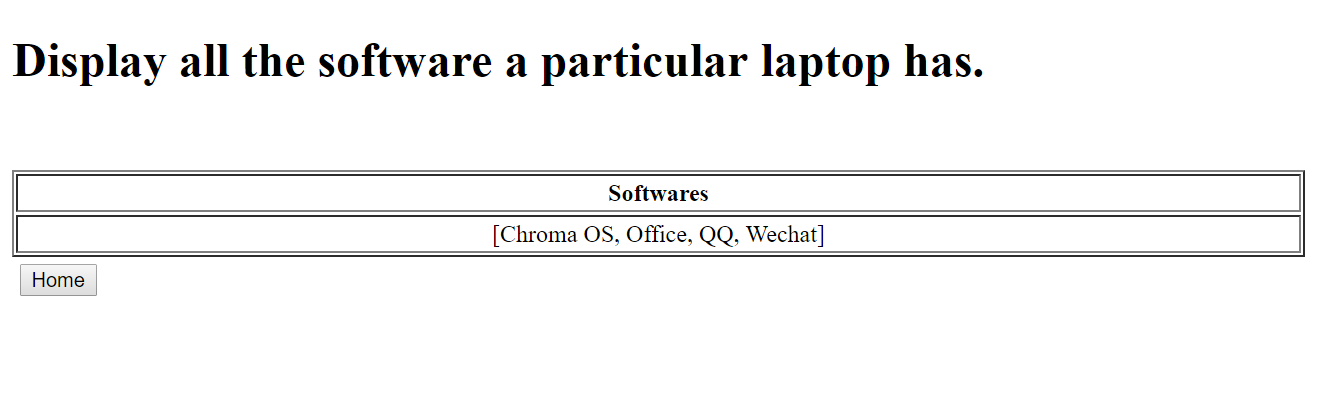


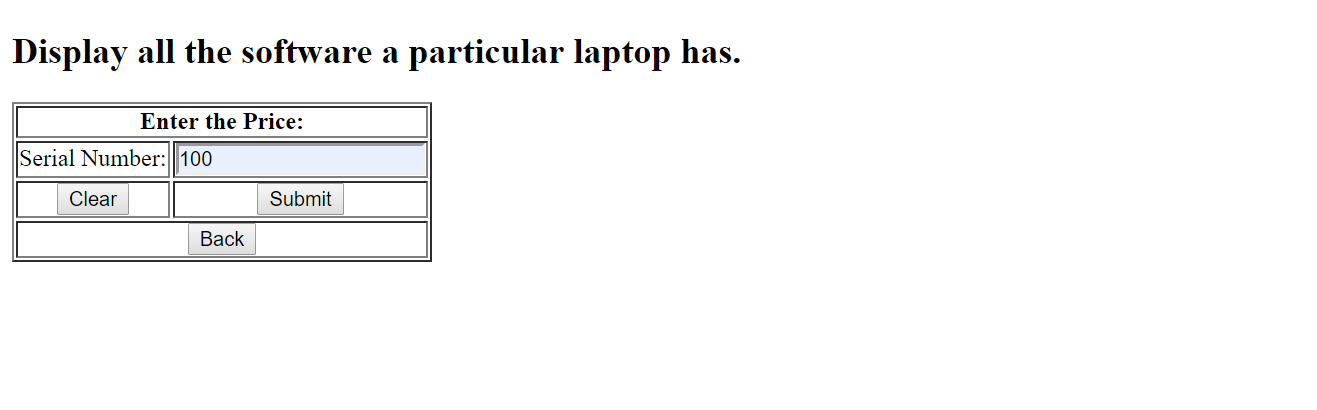


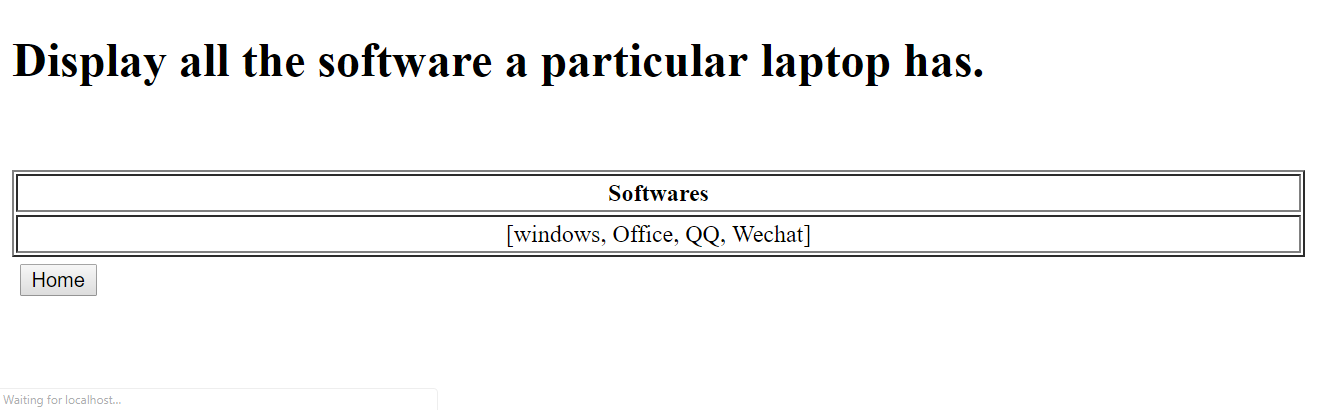


## Query 9





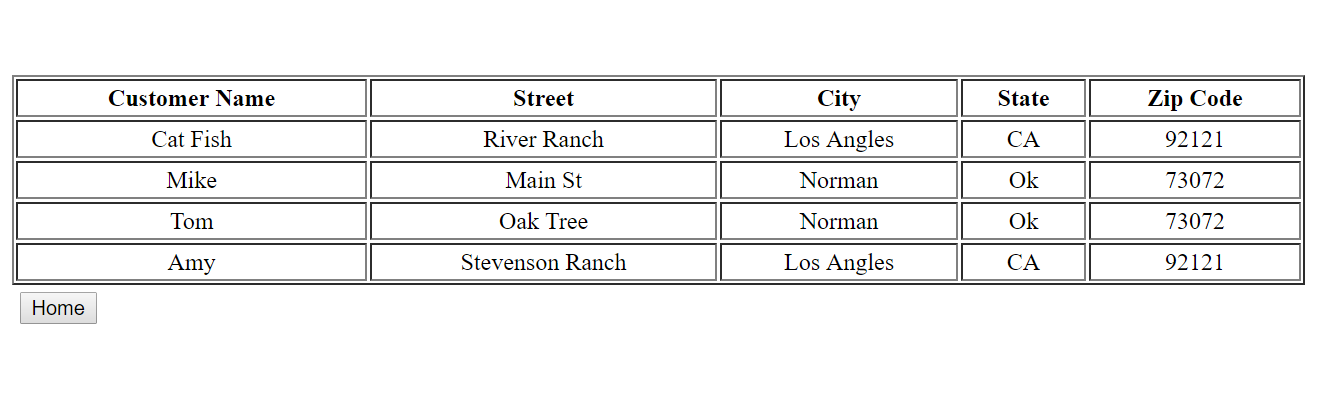




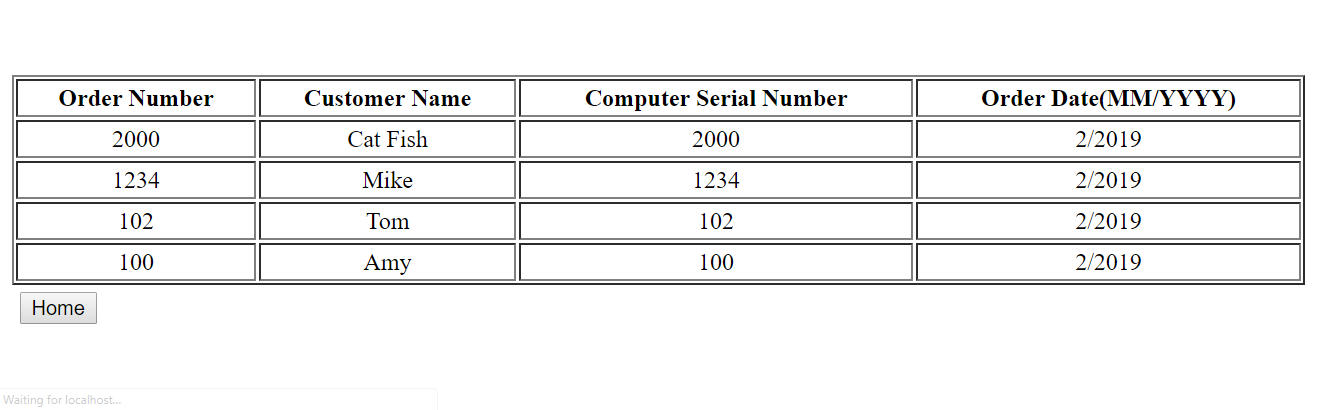
## Query 10

**Before Deletion Table:**

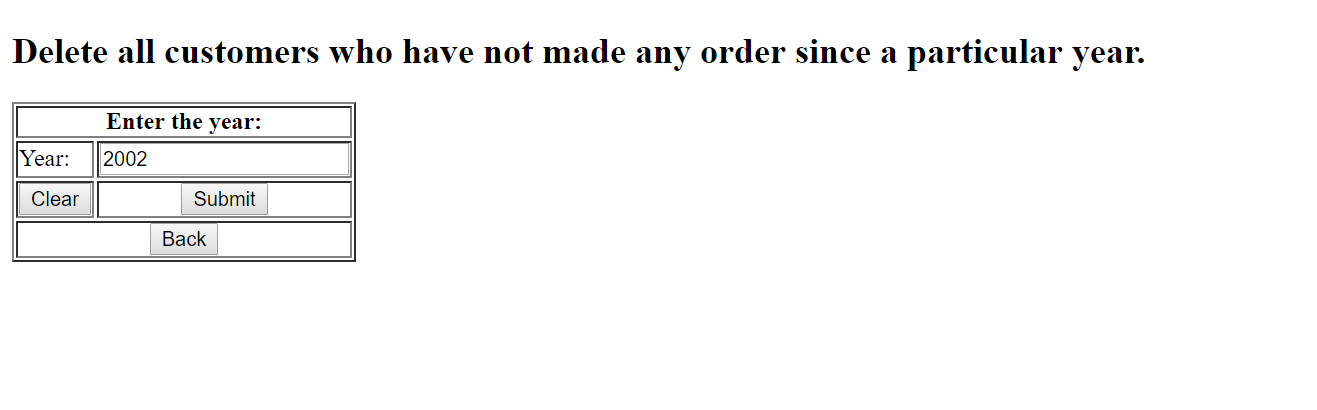
**Customer table**



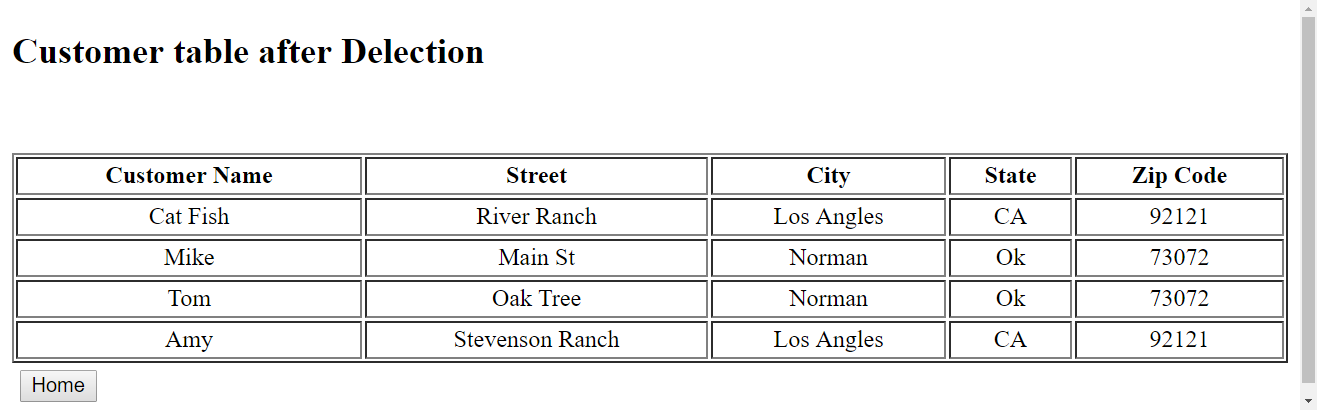
**Order table**



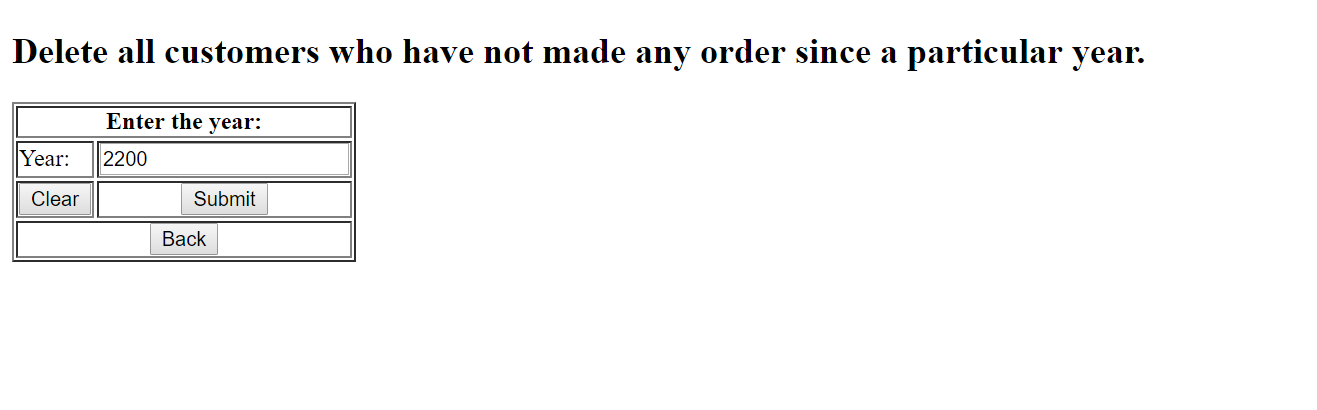
**Execute query:**

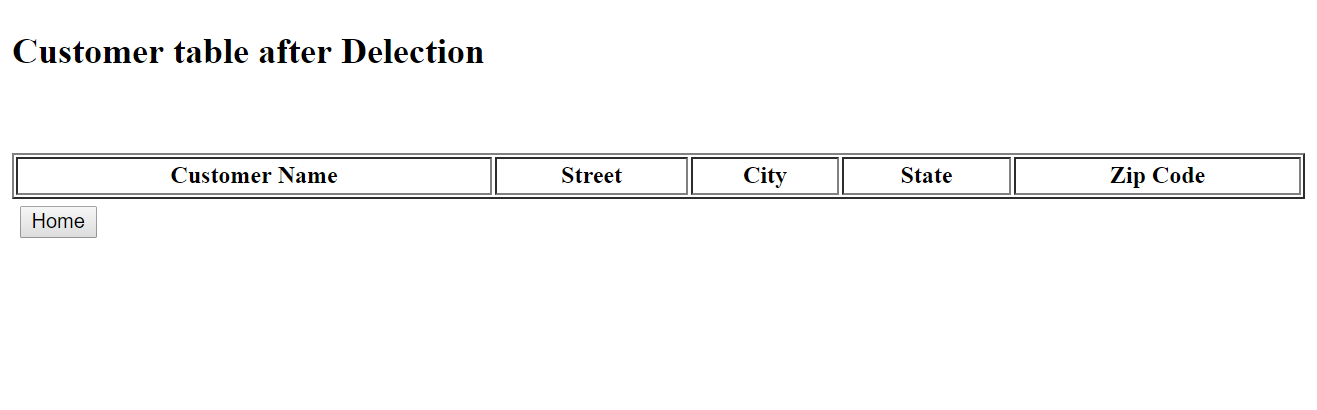


Nothing changed, Because all customer have made some order in 2019



Let’s try enter year 2200, which means the system we delete all customer and order & computer associated with.





Order Table: