**Q:** **Create CRUD operation using Servlet and JDBC**

**Ans:**

**[SQL code]**

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create table user905(id number,name varchar2(30),password varchar2(30),email varchar2(30),country varchar2(30));

create sequence crud increment by 1 start with 1;

select \* from user905;

**[Index.html]**

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<!DOCTYPE html>

<html>

<head>

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

<title>Mphasis Employee Details</title>

</head>

<body>

<h1>Add New Employee</h1>

<form action="SaveServlet" method="post">

<table>

<tr><td>Name:</td><td><input type="text" name="name"/></td></tr>

<tr><td>Password:</td><td><input type="password" name="password"/></td></tr>

<tr><td>Email:</td><td><input type="email" name="email"/></td></tr>

<tr><td>Country:</td><td>

<select name="country" style="width:150px">

<option>India</option>

<option>USA</option>

<option>UK</option>

<option>Other</option>

</select>

</td></tr>

<tr><td colspan="2"><input type="submit" value="Save Employee"/></td></tr>

</table>

</form>

<br/>

<a href="ViewServlet">view employees</a>

</body>

</html>

**[SaveServlet.java]**

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import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/SaveServlet")

public class SaveServlet extends HttpServlet {

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

response.setContentType("text/html");

PrintWriter out=response.getWriter();

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

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

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

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

Emp e=new Emp();

e.setName(name);

e.setPassword(password);

e.setEmail(email);

e.setCountry(country);

int status=EmpDao.save(e);

if(status>0){

out.print("<p>Record saved successfully!</p>");

request.getRequestDispatcher("index.html").include(request, response);

}else{

out.println("Sorry! unable to save record");

}

out.close();

}

}

**[ViewServlet.java]**

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import java.io.IOException;

import java.io.PrintWriter;

import java.util.List;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/ViewServlet")

public class ViewServlet extends HttpServlet {

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

response.setContentType("text/html");

PrintWriter out=response.getWriter();

out.println("<a href='index.html'>Add New Employee</a>");

out.println("<h1>Employees List</h1>");

List<Emp> list=EmpDao.getAllEmployees();

out.print("<table border='1' width='100%'");

out.print("<tr><th>Id</th><th>Name</th><th>Password</th><th>Email</th><th>Country</th><th>Edit</th><th>Delete</th></tr>");

for(Emp e:list){

out.print("<tr><td>"+e.getId()+"</td><td>"+e.getName()+"</td><td>"+e.getPassword()+"</td><td>"+e.getEmail()+"</td><td>"+e.getCountry()+"</td><td><a href='EditServlet?id="+e.getId()+"'>edit</a></td><td><a href='DeleteServlet?id="+e.getId()+"'>delete</a></td></tr>");

}

out.print("</table>");

out.close();

}

}

**[EmpDao.java]**

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import java.util.\*;

import java.sql.\*;

public class EmpDao {

public static Connection getConnection(){

Connection con=null;

try{

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

con=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","system","1234");

}catch(Exception e){System.out.println(e);}

return con;

}

public static int save(Emp e){

int status=0;

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("insert into user905(id,name,password,email,country) values (crud.nextval,?,?,?,?)");

ps.setString(1,e.getName());

ps.setString(2,e.getPassword());

ps.setString(3,e.getEmail());

ps.setString(4,e.getCountry());

status=ps.executeUpdate();

con.close();

}catch(Exception ex){ex.printStackTrace();}

return status;

}

public static int update(Emp e){

int status=0;

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("update user905 set name=?,password=?,email=?,country=? where id=?");

ps.setString(1,e.getName());

ps.setString(2,e.getPassword());

ps.setString(3,e.getEmail());

ps.setString(4,e.getCountry());

ps.setInt(5,e.getId());

status=ps.executeUpdate();

con.close();

}catch(Exception ex){ex.printStackTrace();}

return status;

}

public static int delete(int id){

int status=0;

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("delete from user905 where id=?");

ps.setInt(1,id);

status=ps.executeUpdate();

con.close();

}catch(Exception e){e.printStackTrace();}

return status;

}

public static Emp getEmployeeById(int id){

Emp e=new Emp();

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("select \* from user905 where id=?");

ps.setInt(1,id);

ResultSet rs=ps.executeQuery();

if(rs.next()){

e.setId(rs.getInt(1));

e.setName(rs.getString(2));

e.setPassword(rs.getString(3));

e.setEmail(rs.getString(4));

e.setCountry(rs.getString(5));

}

con.close();

}catch(Exception ex){ex.printStackTrace();}

return e;

}

public static List<Emp> getAllEmployees(){

List<Emp> list=new ArrayList<Emp>();

try{

Connection con=EmpDao.getConnection();

PreparedStatement ps=con.prepareStatement("select \* from user905");

ResultSet rs=ps.executeQuery();

while(rs.next()){

Emp e=new Emp();

e.setId(rs.getInt(1));

e.setName(rs.getString(2));

e.setPassword(rs.getString(3));

e.setEmail(rs.getString(4));

e.setCountry(rs.getString(5));

list.add(e);

}

con.close();

}catch(Exception e){e.printStackTrace();}

return list;

}

}

**[Emp.java]**

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public class Emp {

private int id;

private String name,password,email,country;

public int getId() {

return id;

}

public void setId(int id) {

this.id = id;

}

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public String getCountry() {

return country;

}

public void setCountry(String country) {

this.country = country;

}

}

**[EditServlet.java]**

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import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/EditServlet")

public class EditServlet extends HttpServlet {

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

response.setContentType("text/html");

PrintWriter out=response.getWriter();

out.println("<h1>Update Employee</h1>");

String sid=request.getParameter("id");

int id=Integer.parseInt(sid);

Emp e=EmpDao.getEmployeeById(id);

out.print("<form action='EditServlet2' method='post'>");

out.print("<table>");

out.print("<tr><td></td><td><input type='hidden' name='id' value='"+e.getId()+"'/></td></tr>");

out.print("<tr><td>Name:</td><td><input type='text' name='name' value='"+e.getName()+"'/></td></tr>");

out.print("<tr><td>Password:</td><td><input type='password' name='password' value='"+e.getPassword()+"'/></td></tr>");

out.print("<tr><td>Email:</td><td><input type='email' name='email' value='"+e.getEmail()+"'/></td></tr>");

out.print("<tr><td>Country:</td><td>");

out.print("<select name='country' style='width:150px'>");

out.print("<option>India</option>");

out.print("<option>USA</option>");

out.print("<option>UK</option>");

out.print("<option>Other</option>");

out.print("</select>");

out.print("</td></tr>");

out.print("<tr><td colspan='2'><input type='submit' value='Edit &amp; Save '/></td></tr>");

out.print("</table>");

out.print("</form>");

out.close();

}

}

**[EditServlet2.java]**

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import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/EditServlet2")

public class EditServlet2 extends HttpServlet {

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

response.setContentType("text/html");

PrintWriter out=response.getWriter();

String sid=request.getParameter("id");

int id=Integer.parseInt(sid);

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

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

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

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

Emp e=new Emp();

e.setId(id);

e.setName(name);

e.setPassword(password);

e.setEmail(email);

e.setCountry(country);

int status=EmpDao.update(e);

if(status>0){

response.sendRedirect("ViewServlet");

}else{

out.println("Sorry! unable to update record");

}

out.close();

}

}

**[DeleteServlet.java]**

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import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/DeleteServlet")

public class DeleteServlet extends HttpServlet {

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

String sid=request.getParameter("id");

int id=Integer.parseInt(sid);

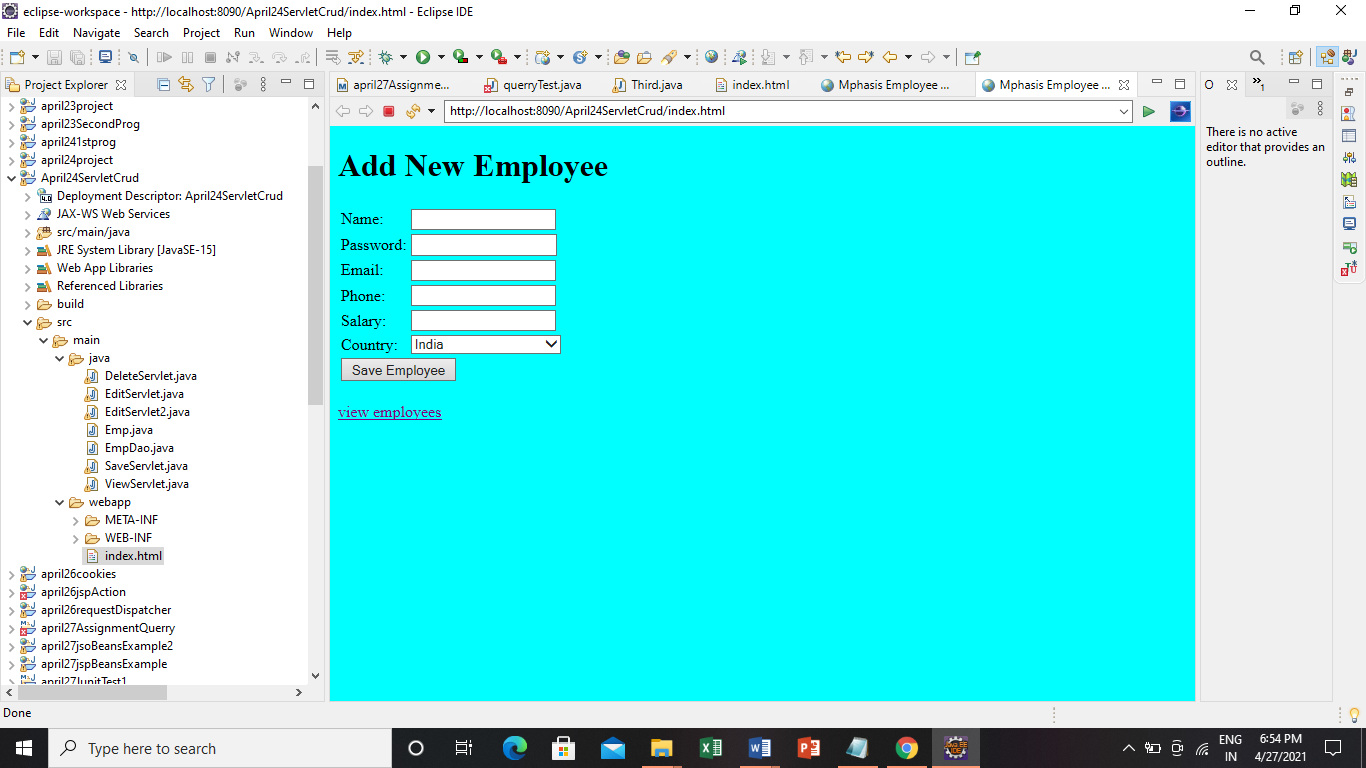
EmpDao.delete(id);

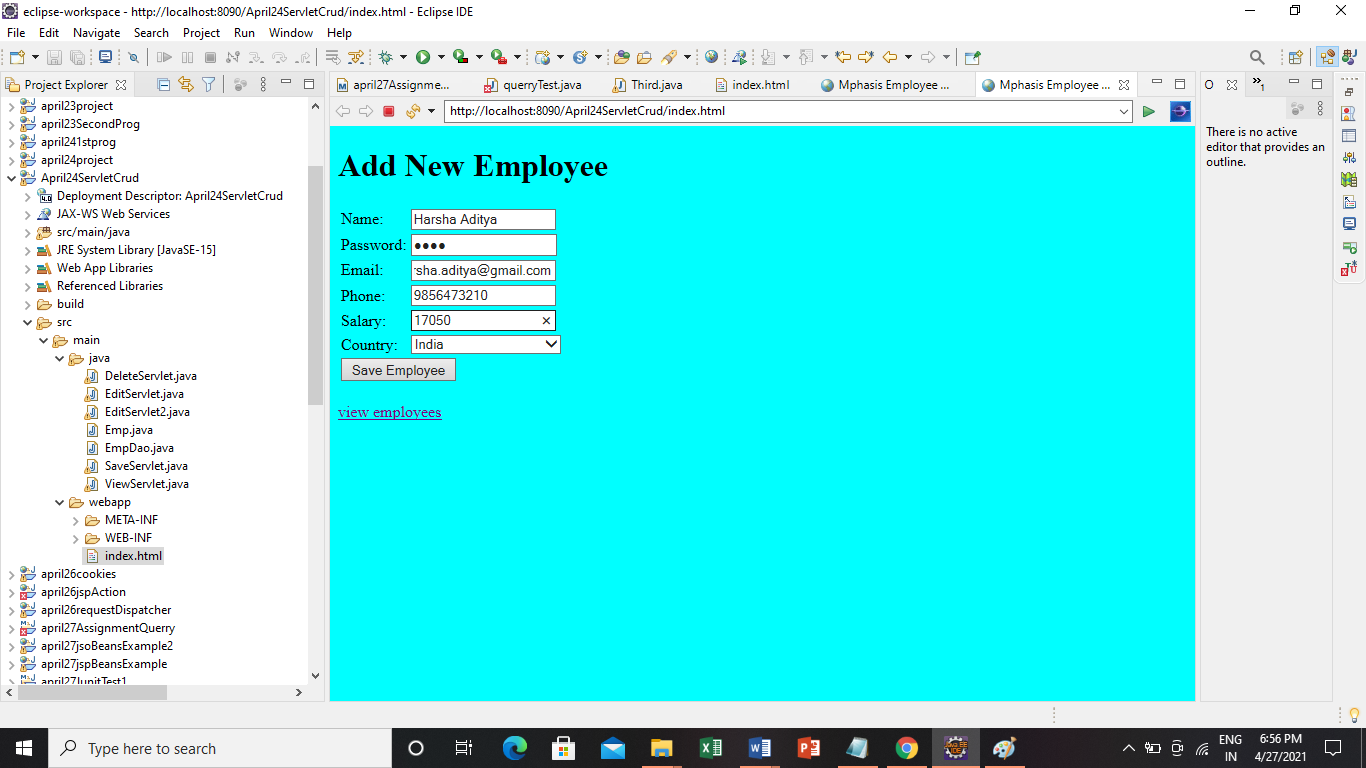
response.sendRedirect("ViewServlet");

}

}

**Output:**

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****

