



**UNIVERSITY MALAYSIA TERENGGANU**  
**FACULTY OF COMPUTER SCIENCE AND MATHEMATICS**  
**WEB BASED APPLICATION DEVELOPMENT**

**CSM3023 (K1)**

Lab Report 8

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Prepared for:

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[BACHELOR OF COMPUTER SCIENCE (MOBILE COMPUTING)]

SEMESTER II 2023/2024

## Task Lab:

MySQL Workbench

The screenshot displays the MySQL Workbench interface with two tabs: 'SEM4 (carshop)' and 'SEM4 (CSF3107)'. The 'carshop' database is selected in the Navigator pane, showing its schema structure. The 'employees' table is highlighted, and its structure is shown in the Information pane. The table has four columns: 'id' (int(11) AI PK), 'Name' (varchar(60)), 'Email' (varchar(50)), and 'Position' (varchar(15)).

The SQL Editor shows a query: `SELECT * FROM company.employees;`

The Result Grid shows the query results:

	id	Name	Email	Position
*	NULL	NULL	NULL	NULL

The Output pane shows the Action Output log:

#	Time	Action
8	03:51:31	USE carshop
9	03:51:31	CREATE TABLE if not EXISTS CarPr...
10	03:51:40	SELECT * FROM carshop.carpricelist...

Query Completed



```
Employee_Management-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+F)

Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x employeeForm.jsp x employeeList.jsp x error.jsp x index.html x index.jsp x

Source History
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<fieldset class="form-group">
  <label>Employee Name</label>
  <input type="text" value="<out value='${employee.name}' />"
    class="form-control" name="name" required="required">
</fieldset>

<fieldset class="form-group">
  <label>Employee Email</label>
  <input type="text" value="<out value='${employee.email}' />"
    class="form-control" name="email">
</fieldset>

<fieldset class="form-group">
  <label>Employee Position</label>
  <input type="text" value="<out value='${employee.position}' />" class="form-control" readonly="readonly" /><!-- comment -->
  <input list="positionList" id="position" class="form-control" name="position"><!-- comment -->
  <datalist id="positionList">
    <option value="Manager "></option>
    <option value="Head of Dept "></option><!-- comment -->
    <option value="Supervisor "></option><!-- comment -->
    <option value="Director "></option>
  </datalist>
</fieldset>

<button type="submit" class="btn btn-success">Save</button>
</form>

</div>
</div>
</div>
</body>

Output
26°C
50.1
INS Unix (LF)
4:25 AM
```

```
Employee_Management-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+F)

Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x employeeForm.jsp x employeeList.jsp x error.jsp x index.html x index.jsp x

Source History
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<!--page contentType="text/html" pageEncoding="UTF-8"%-->
<!--taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" -->

<!DOCTYPE html>
<html>
<head>
  <title>Employee Management Application</title>
  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
    integrity="sha384-ggOyO0y0Y91VlnjPC1oK1x14Ql6lp3IBhKkfAAePW" crossorigin="anonymous">
</head>
<body>
  <header>
    <nav class="navbar navbar-expand-md navbar-dark" style="background-color:tomato">
      <div>
        <a href="" class="navbar-brand"> Employee Management App </a>
      </div>
      <ul class="navbar-nav">
        <li><a href="<%=request.getContextPath()%>/list" class="nav-link">Employees</a></li>
      </ul>
    </nav>
  </header>
  <br>
  <div class="row">
    <div class="container">
      <h3 class="text-center"> List of Employees</h3>
      <br>
      <div class="container text-left">
        <a href="<%=request.getContextPath()%>/new" class="btn btn-success">Add New Employee</a>
      </div>
    </div>
  </div>

Output
2
1:1
INS Unix (LF)
```

[illegible][illegible]

Employee\_Management-1.0-SNAPSHOT - Apache NetBeans IDE 2.0

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

<default config> 348.0/348.0

CarForm.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x employeeForm.jsp x employeeList.jsp x error.jsp x index.html x index.jsp x

Source History

```

1
2
3 <?page contentType="text/html" pageEncoding="UTF-8"%>
4 <!DOCTYPE html>
5 <html>
6     <head>
7         <title>Error Page</title>
8     </head>
9     <body>
10        <center>
11            <h1>Error</h1>
12            <h2><%=exception.getMessage() %><br/></h2>
13        </center>
14    </body>
15 </html>
16
17

```

Employee\_Management-1.0-SNAPSHOT - Apache NetBeans IDE 20

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

385.5 MB

CarForm.jsp x | CarList.jsp x | error.jsp x | index.jsp x | CarServlet.java x | employeeForm.jsp x | employeeList.jsp x | error.jsp x | index.jsp x

Source History

```
1
2
3 <?page contentType="text/html" pageEncoding="UTF-8"?>
4 <!DOCTYPE html>
5 <html>
6   <head>
7     <title>Error Page</title>
8   </head>
9   <body>
10    <center>
11      <h1>Error</h1>
12      <h2><%=exception.getMessage() %><br/></h2>
13    </center>
14  </body>
15 </html>
16
17
```

## Exercise

MySQL Workbench

SEM4 (carshop) x SEM4 (CSF3107) x

File Edit View Query Database Server Tools Scripting Help

SQL File 4\* carpricelist carpricelist - Table carpricelist x SQLAdditi

Limit to 500 rows

1 • SELECT \* FROM carshop.carpricelist;

Auto disable main cursor toggle

Result Grid

Car_id	Brand	Model	Cylinder	Price
NULL	NULL	NULL	NULL	NULL

carpricelist 1 x Apply Revert Context He

Output

Action Output

#	Time	Action	Message
9	03:51:31	CREATE TABLE if not EXISTS CarPr...	0 row(s) affected
10	03:51:40	SELECT * FROM carshop.carpricelist...	0 row(s) returned
11	04:30:47	SELECT * FROM carshop.carpricelist...	0 row(s) returned

Object Info Session

**Table: carpricelist**

**Columns:**

Column	Type	Attributes
Car_id	int(11)	AI PK
Brand	varchar(15)	
Model	varchar(30)	
Cylinder	int(11)	
Price	double	

```
Car_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> 318
Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x
Source History
Services
1 <%page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
2 <%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c"%>
3
4
5
6 <html>
7 <head>
8 <title>Car Shop Application</title>
9 <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
10 integrity="sha384-ggOyO0icKv3Xipma34ND+dR/1fQ784/j6cY/iJTQUOhcWr7x9JvoRt2M3wIT" crossorigin="anonymous">
11 </head>
12 <body>
13 <header>
14 <nav class="navbar navbar-expand-md navbar-dark" style="background-color: blueviolet">
15 <div>
16 <a href="" class="navbar-brand"> Car Shop App </a>
17 </div>
18 <ul class="navbar-nav">
19 <li><a href="<%=request.getContextPath()%>/list" class="nav-link">Cars</a></li>
20 </ul>
21 </nav>
22 </header>
23 <br>
24 <div class="container col-md-5">
25 <div class="card">
26 <div class="card-body">
27 <div>
28 <div>
29 <div>
30 <div>
31 <div>
32 <div>
33 <div>
34 <div>
35 <div>
36 <div>
37 <div>
```

```
Car_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config> 406
Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x
Source History
Services
30 <div>
31 <div>
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```

```
<default config>
Carform.jsp x | error.jsp x | index.jsp x | CarServlet.java x
Source History
44
45 <:if test='${car!=null}'>
46 <input type="hidden" name="carid" value="${car.carid}" />
47 </:if>
48
49 <fieldset class="form-group">
50 <label>Brand</label>
51 <input type="text" value="${car.brand}" />
52 class="form-control" name="brand" required="required"/>
53 </fieldset>
54
55 <fieldset class="form-group">
56 <label>Model</label>
57 <input type="text" value="${car.model}" />
58 class="form-control" name="model"/>
59 </fieldset>
60
61 <fieldset class="form-group">
62 <label>Cylinder</label>
63 <input type="text" value="${car.cylinder}" />
64 class="form-control" name="cylinder"/>
65 </fieldset>
66
67 <fieldset class="form-group">
68 <label>Price</label>
69 <input type="text" value="${car.price}" />
70 class="form-control" name="price"/>
71 </fieldset>
72
73 <button type="submit" class="btn btn-success">Save</button>
74 </form>
75
76 </div>
77 </div>
78 </body>
```

```
Car_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+F)
Carform.jsp x | error.jsp x | index.jsp x | CarServlet.java x
Source History
6 <html>
7 <head>
8 <title>Car Shop Application</title>
9 <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
10 integrity="sha384-ggOyR0iXCbMQVtE61ORMVjGqwE2j8qy1rkSL" data-bbox="117 347 878 628" data-label="Code-Block">

```
11 </head>
12 <body>
13
14 <header><!-- starting bahagian navigation -->
15 <nav class="navbar navbar-expand-md navbar-dark" style="background-color: blueviolet">
16 <div>
17 <a href="#" class="navbar-brand">Car Shop Application</a>
18 </div>
19 <ul class="navbar-nav">
20 <li><a href="${request.getContextPath()}/list" class="nav-link">Cars</a></li>
21 </ul>
22 </nav>
23 </header><!-- End bahagian navigation -->
24 <br>
25 <div class="row">
26
27 <div class="container">
28 <h3 class="text-center">List of Users</h3>
29 <hr>
30 <div class="container text-left">
31 <a href="${request.getContextPath()}/new" class="btn btn-success">Add Car</a>
32 </div>
33 <br>
34 <table class="table table-bordered">
35 <thead>
36 <tr>
37 <th>Car ID</th>
38 <th>Brand</th>
39 <th>Model</th>
40 <th>Cylinder</th>
41 <th>Price</th>
42 </tr>
43 </thead>
44 </table>
45 </div>
46 </div>
47 </body>
48 </html>
```


```





```
Car_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x

Source History
1 /*
2  * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
3  * Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Servlet.java to edit this template
4  */
5 package com.WEB;
6
7 import java.io.IOException;
8 import java.sql.SQLException;
9 import java.util.List;
10
11 import jakarta.servlet.RequestDispatcher;
12 import jakarta.servlet.ServletException;
13 import jakarta.servlet.annotation.WebServlet;
14 import jakarta.servlet.http.HttpServlet;
15 import jakarta.servlet.http.HttpServletRequest;
16 import jakarta.servlet.http.HttpServletResponse;
17
18 import com.DAO.CarDAO;
19 import com.Model.Car;
20
21 @WebServlet("/")
22 public class CarServlet extends HttpServlet {
23
24     private CarDAO carDAO;
25
26     public void init() {
27         carDAO = new CarDAO();
28     }
29
30     @Override
31     protected void doPost(HttpServletRequest request, HttpServletResponse response)
32         throws ServletException, IOException {
33         doGet(request, response);
34     }
35
36     @Override
37     protected void doGet(HttpServletRequest request, HttpServletResponse response)
38         throws ServletException, IOException {
39
40         String action = request.getServletPath();
41
42         try {
43             switch (action) {
44                 case "/new":
45                     showNewForm(request, response);
46                     break;
47
48                 case "/insert":
49                     insertCar(request, response);
50                     break;
51
52                 case "/delete":
53                     deleteCar(request, response);
54                     break;
55
56                 case "/edit":
57                     showEditForm(request, response);
58                     break;
59
60                 case "/update":
61                     updateCar(request, response);
62                     break;
63
64                 default:
65                     listCar(request, response);
66                     break;
67             }
68         } catch (SQLException e) {
69             throw new ServletException(e);
70         }
71     }
72 }
73
```

```
Car_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x

Source History
38 throws ServletException, IOException {
39
40     String action = request.getServletPath();
41
42     try {
43         switch (action) {
44             case "/new":
45                 showNewForm(request, response);
46                 break;
47
48             case "/insert":
49                 insertCar(request, response);
50                 break;
51
52             case "/delete":
53                 deleteCar(request, response);
54                 break;
55
56             case "/edit":
57                 showEditForm(request, response);
58                 break;
59
60             case "/update":
61                 updateCar(request, response);
62                 break;
63
64             default:
65                 listCar(request, response);
66                 break;
67         }
68     } catch (SQLException e) {
69         throw new ServletException(e);
70     }
71 }
72 }
73
```

Car\_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Search (Ctrl+I)

Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x

Source History

```
73
74 private void listCar(HttpServletRequest request, HttpServletResponse response)
75     throws SQLException, IOException, ServletException {
76     List<Car> listCar = carDAO.selectAllCars();
77     request.setAttribute("listCar", listCar);
78     RequestDispatcher dispatcher = request.getRequestDispatcher("CarList.jsp");
79     dispatcher.forward(request, response);
80 }
81
82 private void showNewForm(HttpServletRequest request, HttpServletResponse response)
83     throws ServletException, IOException {
84     RequestDispatcher dispatcher = request.getRequestDispatcher("CarForm.jsp");
85     dispatcher.forward(request, response);
86 }
87
88 private void showEditForm(HttpServletRequest request, HttpServletResponse response)
89     throws SQLException, IOException, ServletException {
90     int carid = Integer.parseInt(request.getParameter("carid"));
91     Car existingCar = carDAO.selectCar(carid);
92     RequestDispatcher dispatcher = request.getRequestDispatcher("CarForm.jsp");
93     request.setAttribute("car", existingCar);
94     dispatcher.forward(request, response);
95 }
96
97 private void insertCar(HttpServletRequest request, HttpServletResponse response)
98     throws SQLException, IOException {
99
100     String brand = request.getParameter("brand");
101     String model = request.getParameter("model");
102     int cylinder = Integer.parseInt(request.getParameter("cylinder"));
103     double price = Double.parseDouble(request.getParameter("price"));
104
105     Car newCar = new Car(brand, model, cylinder, price);
106     carDAO.insertCar(newCar);
107     response.sendRedirect("list");
108 }
109 }
```

Car\_shop-1.0-SNAPSHOT - Apache NetBeans IDE 20

File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help

Search (Ctrl+I)

Carform.jsp x CarList.jsp x error.jsp x index.jsp x CarServlet.java x

Source History

```
101 String brand = request.getParameter("brand");
102 String model = request.getParameter("model");
103 int cylinder = Integer.parseInt(request.getParameter("cylinder"));
104 double price = Double.parseDouble(request.getParameter("price"));
105
106 Car newCar = new Car(brand, model, cylinder, price);
107 carDAO.insertCar(newCar);
108 response.sendRedirect("list");
109 }
110
111 private void updateCar(HttpServletRequest request, HttpServletResponse response)
112     throws SQLException, IOException {
113     int carid = Integer.parseInt(request.getParameter("carid"));
114     String brand = request.getParameter("brand");
115     String model = request.getParameter("model");
116     int cylinder = Integer.parseInt(request.getParameter("cylinder"));
117     double price = Double.parseDouble(request.getParameter("price"));
118
119     Car uCar = new Car(carid, brand, model, cylinder, price);
120     carDAO.updateCar(uCar);
121     response.sendRedirect("list");
122 }
123
124 private void deleteCar(HttpServletRequest request, HttpServletResponse response)
125     throws SQLException, IOException {
126     int carid = Integer.parseInt(request.getParameter("carid"));
127     carDAO.deleteCar(carid);
128     response.sendRedirect("list");
129 }
130
131 }
132 }
```

Output 132:1 INS Windows (CRLF)