

REG NO. : 412422205009

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SOURCE CODE :

SQL COMMANDS :

```
mysql> -- Create the database
```

```
mysql> CREATE DATABASE IF NOT EXISTS airlinedb;
```

Query OK, 1 row affected (0.00 sec)

```
mysql>
```

```
mysql> -- Use the airlinedb database
```

```
mysql> USE airlinedb;
```

Database changed

```
mysql>
```

```
mysql> -- Create the airlines table if it doesn't exist
```

```
mysql> CREATE TABLE IF NOT EXISTS airlines (
```

```
->  airline_id INT PRIMARY KEY,
```

```
->  name VARCHAR(100),
```

```
->  code VARCHAR(10),
```

```
->  origin VARCHAR(50),
```

```
->  destination VARCHAR(50),
```

```
->  departure_time TIME,
```

```
->  arrival_time TIME
```

```
-> );
```

Query OK, 0 rows affected (0.02 sec)

```
mysql>
```

```
mysql> -- Insert initial records into the airlines table
```

```
mysql> INSERT INTO airlines (airline_id, name, code, origin, destination, departure_time, arrival_time) VALUES
```

```
-> (1, 'Airline 1', 'AI101', 'New York', 'London', '09:00:00', '22:00:00'),
```

```
-> (2, 'Airline 2', 'AI102', 'London', 'Paris', '12:00:00', '14:00:00');
```

Query OK, 2 rows affected (0.00 sec)

Records: 2 Duplicates: 0 Warnings: 0

```
mysql>
mysql> -- Insert additional 20 records into the airlines table
mysql> INSERT INTO airlines (airline_id, name, code, origin, destination, departure_time,
arrival_time) VALUES
-> (3, 'Airline 3', 'AI103', 'Paris', 'Berlin', '10:00:00', '12:00:00'),
-> (4, 'Airline 4', 'AI104', 'Berlin', 'New York', '11:00:00', '16:00:00'),
-> (5, 'Airline 5', 'AI105', 'Tokyo', 'Los Angeles', '13:00:00', '18:00:00'),
-> (6, 'Airline 6', 'AI106', 'Los Angeles', 'Tokyo', '15:00:00', '20:00:00'),
-> (7, 'Airline 7', 'AI107', 'London', 'Berlin', '08:00:00', '10:00:00'),
-> (8, 'Airline 8', 'AI108', 'Berlin', 'Paris', '09:00:00', '11:00:00'),
-> (9, 'Airline 9', 'AI109', 'Paris', 'New York', '14:00:00', '16:00:00'),
-> (10, 'Airline 10', 'AI110', 'New York', 'Tokyo', '16:00:00', '19:00:00'),
-> (11, 'Airline 11', 'AI111', 'Tokyo', 'London', '18:00:00', '22:00:00'),
-> (12, 'Airline 12', 'AI112', 'Los Angeles', 'Paris', '17:00:00', '20:00:00'),
-> (13, 'Airline 13', 'AI113', 'London', 'Tokyo', '07:00:00', '21:00:00'),
-> (14, 'Airline 14', 'AI114', 'New York', 'Los Angeles', '10:00:00', '12:00:00'),
-> (15, 'Airline 15', 'AI115', 'Paris', 'Los Angeles', '13:00:00', '15:00:00'),
-> (16, 'Airline 16', 'AI116', 'Tokyo', 'Berlin', '09:00:00', '12:00:00'),
-> (17, 'Airline 17', 'AI117', 'Berlin', 'New York', '14:00:00', '20:00:00'),
-> (18, 'Airline 18', 'AI118', 'Los Angeles', 'London', '16:00:00', '20:00:00'),
-> (19, 'Airline 19', 'AI119', 'New York', 'Paris', '12:00:00', '14:00:00'),
-> (20, 'Airline 20', 'AI120', 'Paris', 'Tokyo', '11:00:00', '15:00:00'),
-> (21, 'Airline 21', 'AI121', 'London', 'New York', '08:00:00', '11:00:00'),
-> (22, 'Airline 22', 'AI122', 'Berlin', 'Tokyo', '10:00:00', '16:00:00');
```

Query OK, 20 rows affected (0.00 sec)

Records: 20 Duplicates: 0 Warnings: 0

AirlineService.java

```
package com.akash;

import javax.jws.WebService;
import java.sql.*;
import java.util.ArrayList;
import java.util.List;
```

```
@WebService(endpointInterface = "com.akash.AirlineServiceInterface")
public class AirlineService implements AirlineServiceInterface {

    @Override
    public List<String[]> searchAirlines(String origin, String destination) {
        List<String[]> result = new ArrayList<>();

        // JDBC Connection Parameters
        String dbURL = "jdbc:mysql://localhost:3306/AirlineDB?useSSL=false&serverTimezone=UTC&allowPublicKeyRetrieval=true";
        String dbUsername = "root";
        String dbPassword = "root";

        try {
            // Load the MySQL JDBC driver
            Class.forName("com.mysql.cj.jdbc.Driver");

            // Establish the connection
            try (Connection conn = DriverManager.getConnection(dbURL, dbUsername, dbPassword)) {
                // Prepare SQL query
                String query = "SELECT name, code, origin, destination, departure_time, arrival_time
FROM Airlines WHERE origin = ? AND destination = ?";

                try (PreparedStatement stmt = conn.prepareStatement(query)) {
                    stmt.setString(1, origin);
                    stmt.setString(2, destination);

                    // Execute the query and store the results
                    ResultSet rs = stmt.executeQuery();
                    while (rs.next()) {
                        // Store airline details in a String array
                        String[] airlineDetails = new String[6];
                        airlineDetails[0] = rs.getString("name");
                        airlineDetails[1] = rs.getString("code");
                        airlineDetails[2] = rs.getString("origin");
                        airlineDetails[3] = rs.getString("destination");
```

```

        airlineDetails[4] = rs.getString("departure_time");
        airlineDetails[5] = rs.getString("arrival_time");

        // Add this array to the result list
        result.add(airlineDetails);
    }
}
}
} catch (SQLException | ClassNotFoundException e) {
    e.printStackTrace();
}

return result;
}
}

```

AirlineClient.java

```

package com.akash;

import javax.xml.namespace.QName;
import javax.xml.ws.Service;
import java.net.URL;
import java.util.List;

public class AirlineClient {

    public static void main(String[] args) throws Exception {
        // Ensure there are two parameters (origin and destination)
        if (args.length < 2) {
            System.out.println("Usage: AirlineClient <origin> <destination>");
            System.exit(1);
        }
        String origin = args[0];
    }
}

```

```

String destination = args[1];
// URL of the WSDL of the deployed Web Service
URL url = new URL("http://localhost:8080/akash2/AirlineServiceService?WSDL");

QName qname = new QName("http://akash1.com/", "AirlineServiceService");

// Create the service object
Service service = Service.create(url, qname);

// Get the Web Service client (port) using the interface
AirlineServiceInterface port = service.getPort(AirlineServiceInterface.class);

// Call the Web Service method with the dynamic parameters
List<String[]> airlines = port.searchAirlines(origin, destination);

System.out.println("Airlines found from " + origin + " to " + destination + ":");
for (String[] airline : airlines) {
    // Print each airline's details from the String array
    System.out.println("Name: " + airline[0] +
        ", Code: " + airline[1] +
        ", Origin: " + airline[2] +
        ", Destination: " + airline[3] +
        ", Departure Time: " + airline[4] +
        ", Arrival Time: " + airline[5]);
}
}
}

```

AirlineServiceInterface.java

```

package com.akash;

import javax.jws.WebMethod;
import javax.jws.WebService;
import java.util.List;

```

```
@WebService
```

```
public interface AirlineServiceInterface {
```

```
    @WebMethod
```

```
    List<String[]> searchAirlines(String origin, String destination);
```

```
}
```

searchAirlines.jsp

```
<%@ page contentType="text/html; charset=UTF-8" language="java" %>
```

```
<html>
```

```
<head>
```

```
    <title>Search Airlines</title>
```

```
</head>
```

```
<body>
```

```
    <h1>Search for Airlines</h1>
```

```
    <form action="searchResults.jsp" method="get">
```

```
        <label for="origin">Origin:</label>
```

```
        <input type="text" id="origin" name="origin">
```

```
        <br>
```

```
        <label for="destination">Destination:</label>
```

```
        <input type="text" id="destination" name="destination">
```

```
        <br>
```

```
        <input type="submit" value="Search">
```

```
    </form>
```

```
</body>
```

```
</html>
```

searchResults.java

```
<%@page import="com.akash.AirlineServiceInterface"%>
<%@page import="java.net.URL"%>
<%@page import="java.util.*, javax.xml.namespace.QName, javax.xml.ws.Service" %>
<%@ page contentType="text/html;charset=UTF-8" language="java" %>
<html>
<head>
    <title>Search Results</title>
</head>
<body>
    <h1>Airline Search Results</h1>
    <%
        String origin = request.getParameter("origin");
        String destination = request.getParameter("destination");

        // Web Service URL
        URL url = new URL("http://localhost:8080/akash2/AirlineServiceService?WSDL");

        // Define QName for the service
        QName qname = new QName("http://akash.com/", "AirlineServiceService");

        // Create the Service object
        Service service = Service.create(url, qname);

        // Get the Web Service client (port)
        AirlineServiceInterface port = service.getPort(AirlineServiceInterface.class);

        // Call the Web Service to search for airlines
        List<String[]> airlines = port.searchAirlines(origin, destination);

        if (airlines != null && !airlines.isEmpty()) {
    %>
    <table border="1">
```

```

<tr>
  <th>Airline Name</th>
  <th>Code</th>
  <th>Origin</th>
  <th>Destination</th>
  <th>Departure Time</th>
  <th>Arrival Time</th>
</tr>
<%
  for (String[] airline : airlines) {
%>
<tr>
  <td><%= airline[0] %></td>
  <td><%= airline[1] %></td>
  <td><%= airline[2] %></td>
  <td><%= airline[3] %></td>
  <td><%= airline[4] %></td>
  <td><%= airline[5] %></td>
</tr>
<%
  }
%>
</table>
<%
} else {
%>
<p>No airlines found for the selected route.</p>
<%
}
%>
</body>
</html>

```


OUTPUT :

Search for Airlines

Origin:

Destination:

Search for Airlines

Origin:

Destination:

Airline Search Results

Airline Name	Code	Origin	Destination	Departure Time	Arrival Time
Airline 19	AI119	New York	Paris	12:00:00	14:00:00