|  |  |
| --- | --- |
| **Ex No: 10** | **Online Air Ticket Booking System using Web Services** |
| **Date:** |

**AIM:**

To create a web service application that has airline service, ticketing service and a client application that uses the ticketing service to get basic details of flight from different airlines.

**ALGORITHM:**

**Step** 1: Create Airline Service Module

**Step** 1.1: Create a Flight Class with following attributes along with getters and setters

* + private String flightNumber;
  + private int totalNumberOfSeats;
  + private int seatsAvailable;
  + private String date;
  + private String source;
  + private String destination;
  + private int fare;

**Step** 1.2: Create and Interface AirlineOperations that includes following methods

* + - boolean addFlight(Flight aFlight); - Helps to add a flight by airliner
    - boolean removeFlight(String flightNumber) - Helps to remove a flight by airliner
    - int checkTicketAvailability(String aDate); - Helps to check for ticket availability in all flights of a particular airline in particular date
    - int getFare(String flightNumber) – Help to get a fair detail for a particular flight

**Step** 1.3: Create Two Airliners [SpiceJet and JetAirWays] that implements

AirlineOperations along with getters and setters.

**Step**.4: For both SpiceJet and JetAirWays implements AirlineOperations Methods and

annotate class with @WebService

**Step** 1.5: For both Airline need to create publish code and make the service available as

Follows

* Spicejet = <http://localhost:5000/spicejet>
* JetAirways = <http://localhost:5001/jetairways>

**Step** 1.6: Makesure the wsdl available in <http://localhost:5000/spicejet?wsdl> and

<http://localhost:5001/jetairways?wsdl>

**Step** 2: Ticket Service Module

**Step 2.1:** Generate required classes by following two commands in cmd prompt

1. wsimport -keep -verbose http://localhost:5000/spicejet?wsdl -s ./src/ -d ./bin/
2. wsimport -keep -verbose http://localhost:5001/jetairways?wsdl -s ./src/ -d ./bin/

**Step** 2.2: Make sure all the methods of web service class available as class files inside the project

**Step** 2.3: Create TicketSearch interface with following methods

* List<Flight> getFlightsByDate(String date,String from, String to);
* Flight getLowestFareByDate(String date,String from,String to);

**Step** 2.4: Create TicketSearchImpl class and implement the methods of TicketSearch

**Step** 2.4.1 for getFlightsByDate receive date,from,to info and access the service

with appropriate classes of SpiceJet and JetAirways and get the

matched flights of a date and source, destination and generate as new list

**Step** 2.4.2 return the available new list as previous search results

**Step** 2.4.3 for getLowestFareByDate receive date,from,to and call

getFlightsByDate and get the minimum fare value in the collection and return it.

**Step** 2.5: Annotate TicketSearchImpl as @Webservice

**Step** 2.6 Make the service available in <http://localhost:5001/ticketservice> and make sure the WSDL available at <http://localhost:5001/ticketservice?wsdl>

**Step** 3: Create TicketSearchClient

**Step 3.1:** Generate required classes by following two command in cmd prompt

* wsimport -keep -verbose <http://localhost:5001/ticketservice?wsdl>-s ./src/ -d ./bin/

**Step** 3.2: Access TicketService by invoking appropriate methods of generated classes

**Step** 3.3: Make sure Step 1 and Step 2 are done

**Step** 3.4: get the available flights for the date 12-11-2020 from CJB to MAS and display flight information

**Step** 3.5 get the lowest fair flight for the date 12-11-2020 from CJB to MAS and display flight information

**Step** 4: Stop all services and client

**Step** 5: Stop process

**PROGRAM:**

**Airline Server Module**

***Flight.java***

**package com.airline;**

**public class Flight {**

**private String flightNumber;**

**private int totalNumberOfSeats;**

**private int seatsAvailable;**

**private String date;**

**private String source;**

**private String destination;**

**private int fare;**

**public Flight(String flightNumber, int totalNumberOfSeats,**

**int seatsAvailable, String date, String source, String destination,**

**int fare) {**

**this.flightNumber = flightNumber;**

**this.totalNumberOfSeats = totalNumberOfSeats;**

**this.seatsAvailable = seatsAvailable;**

**this.date = date;**

**this.source = source;**

**this.destination = destination;**

**this.fare = fare;**

**}**

**public String getFlightNumber() {**

**return flightNumber;**

**}**

**public void setFlightNumber(String flightNumber) {**

**this.flightNumber = flightNumber;**

**}**

**public int getTotalNumberOfSeats() {**

**return totalNumberOfSeats;**

**}**

**public void setTotalNumberOfSeats(int totalNumberOfSeats) {**

**this.totalNumberOfSeats = totalNumberOfSeats;**

**}**

**public int getSeatsAvailable() {**

**return seatsAvailable;**

**}**

**public void setSeatsAvailable(int seatsAvailable) {**

**this.seatsAvailable = seatsAvailable;**

**}**

**public String getDate() {**

**return date;**

**}**

**public void setDate(String date) {**

**this.date = date;**

**}**

**public String getSource() {**

**return source;**

**}**

**public void setSource(String source) {**

**this.source = source;**

**}**

**public String getDestination() {**

**return destination;**

**}**

**public void setDestination(String destination) {**

**this.destination = destination;**

**}**

**public int getFare() {**

**return fare;**

**}**

**public void setFare(int fare) {**

**this.fare = fare;**

**}**

**@Override**

**public String toString() {**

**super.toString();**

**return "Flight [getFlightNumber()=" + getFlightNumber()**

**+ ", getTotalNumberOfSeats()=" + getTotalNumberOfSeats()**

**+ ", getSeatsAvailable()=" + getSeatsAvailable()**

**+ ", getDate()=" + getDate() + ", getSource()=" + getSource()**

**+ ", getDestination()=" + getDestination() + ", getFare()="**

**+ getFare() + "]";**

**}**

**}**

***AirlineOperations.java***

**package com.airline;**

**public interface AirlineOperations {**

**boolean addFlight(Flight aFlight);**

**boolean removeFlight(String flightNumber);**

**int checkTicketAvailability(String aDate);**

**int getFare(String flightNumber);**

**}**

**Jet Airways**

**package com.airline;**

**import java.util.ArrayList;**

**import java.util.List;**

**import javax.jws.WebService;**

**@WebService**

**public class JetAirways implements AirlineOperations{**

**private String airlineName = "JetAirWays";**

**private List<Flight> flights = new ArrayList<Flight>();**

**public String getAirlineName() {**

**return airlineName;**

**}**

**public void setAirlineName(String airlineName) {**

**this.airlineName = airlineName;**

**}**

**public List<Flight> getFlights() {**

**return flights;**

**}**

**public void setFlights(List<Flight> flights) {**

**this.flights = flights;**

**}**

**@Override**

**public boolean addFlight(Flight aFlight) {**

**flights.add(aFlight);**

**return true;**

**}**

**@Override**

**public boolean removeFlight(String flightNumber) {**

**for(Flight aFlight:flights){**

**if(aFlight.getFlightNumber().equals(flightNumber)){**

**flights.remove(aFlight);**

**return true;**

**}**

**}**

**return false;**

**}**

**public int checkTicketAvailability(String aDate) {**

**for(Flight aFlight:flights){**

**if(aFlight.getDate().equals(aDate)){**

**return aFlight.getSeatsAvailable();**

**}**

**}**

**return 0;**

**}**

**@Override**

**public int getFare(String flightNumber) {**

**// TODO Auto-generated method stub**

**for(Flight aFlight:flights){**

**if(aFlight.getFlightNumber().equals(flightNumber)){**

**return aFlight.getFare();**

**}**

**}**

**return 0;**

**}**

**}**

**SpiceJet.java**

**package com.airline;**

**import java.util.ArrayList;**

**import java.util.List;**

**import javax.jws.WebService;**

**@WebService**

**public class SpiceJet implements AirlineOperations{**

**private String airlineName = "SpiceJet";**

**private List<Flight> flights = new ArrayList<Flight>();**

**public String getAirlineName() {**

**return airlineName;**

**}**

**public void setAirlineName(String airlineName) {**

**this.airlineName = airlineName;**

**}**

**public List<Flight> getFlights() {**

**return flights;**

**}**

**public void setFlights(List<Flight> flights) {**

**this.flights = flights;**

**}**

**@Override**

**public boolean addFlight(Flight aFlight) {**

**flights.add(aFlight);**

**return true;**

**}**

**@Override**

**public boolean removeFlight(String flightNumber) {**

**for(Flight aFlight:flights){**

**if(aFlight.getFlightNumber().equals(flightNumber)){**

**flights.remove(aFlight);**

**return true;**

**}**

**}**

**return false;**

**}**

**@Override**

**public int checkTicketAvailability(String aDate) {**

**for(Flight aFlight:flights){**

**if(aFlight.getDate().equals(aDate)){**

**return aFlight.getSeatsAvailable();**

**}**

**}**

**return 0;**

**}**

**@Override**

**public int getFare(String flightNumber) {**

**for(Flight aFlight:flights){**

**if(aFlight.getFlightNumber().equals(flightNumber)){**

**return aFlight.getFare();**

**}**

**}**

**return 0;**

**}**

**}**

**JetAirWaysMain.java**

**package com.airline;**

**import javax.xml.ws.Endpoint;**

**public class JetAirwaysMain {**

**public static void main(String[] args) {**

**JetAirways jetairways = new JetAirways();**

**jetairways.addFlight(new Flight("JA443", 112, 100, "12-11-2020", "CJB", "MAS", 4125));**

**jetairways.addFlight(new Flight("JA689", 130, 45, "14-11-2020", "CJB", "BOM", 6234));**

**Endpoint.*publish*("http://localhost:5001/jetairways", jetairways);**

**System.*out*.println("jetairways service published");**

**}**

**}**

**SpiceJetMain.java**

**package com.airline;**

**import javax.xml.ws.Endpoint;**

**public class SpiceJetMain {**

**public static void main(String[] args) {**

**SpiceJet spicejet = new SpiceJet();**

**spicejet.addFlight(new Flight("SJ501", 87, 87, "12-11-2020", "CJB", "MAS", 4589));**

**spicejet.addFlight(new Flight("SJ889", 119, 92, "14-11-2020", "CJB", "BOM", 7823));**

**Endpoint.*publish*("http://localhost:5000/spicejet", spicejet);**

**System.*out*.println("spicejet service published");**

**}**

**}**

**Ticket Server Module**

**TicketSearch.java**

**package com.mytrip;**

**import java.util.List;**

**import com.airline.Flight;**

**public interface TicketSearch {**

**List<Flight> getFlightsByDate(String date,String from, String to);**

**Flight getLowestFareByDate(String date,String from,String to);**

**}**

**TicketSearchImpl.java**

**package com.mytrip;**

**import java.util.ArrayList;**

**import java.util.List;**

**import javax.jws.WebService;**

**import com.airline.Flight;**

**import com.airline.JetAirways;**

**import com.airline.JetAirwaysService;**

**import com.airline.SpiceJet;**

**import com.airline.SpiceJetService;**

**@WebService**

**public class TicketSearchImpl implements TicketSearch{**

**@Override**

**public List<Flight> getFlightsByDate(String date,String from,String to) {**

**List<Flight> fligthsAvailable = new ArrayList<Flight>();**

**SpiceJet spicejetservice = new SpiceJetService().getSpiceJetPort();**

**for(Flight aSpiceJetFlight:spicejetservice.getFlights()){**

**if(aSpiceJetFlight.getDate().equals(date)&&aSpiceJetFlight.getSource().equals(from)&&aSpiceJetFlight.getDestination().equals(to)){**

**fligthsAvailable.add(aSpiceJetFlight);**

**}**

**}**

**JetAirways jetairwaysservice = new JetAirwaysService().getJetAirwaysPort();**

**for(Flight aJetAirWaysFlight:jetairwaysservice.getFlights()){**

**if(aJetAirWaysFlight.getDate().equals(date)&&aJetAirWaysFlight.getSource().equals(from)&&aJetAirWaysFlight.getDestination().equals(to)){**

**fligthsAvailable.add(aJetAirWaysFlight);**

**}**

**}**

**return fligthsAvailable;**

**}**

**@Override**

**public Flight getLowestFareByDate(String date,String from,String to) {**

**Flight lowFareFlight=null;**

**List<Flight> fligthsAvailable = getFlightsByDate(date, from, to);**

**lowFareFlight = fligthsAvailable.get(0);**

**int minfare = lowFareFlight.getFare();**

**for(Flight xFlight:fligthsAvailable){**

**if(xFlight.getFare()<minfare){**

**lowFareFlight = xFlight;**

**minfare = xFlight.getFare();**

**}**

**}**

**return lowFareFlight;**

**}**

**}**

**TicketSearchMain.java**

**package com.mytrip;**

**import javax.xml.ws.Endpoint;**

**public class TicketSearchMain {**

**public static void main(String[] args) {**

**Endpoint.*publish*("http://localhost:5002/ticketservice", new TicketSearchImpl());;**

**System.*out*.println("ticket service published");**

**}**

**}**

**Ticket Client Module**

**TickerClientMain.java**

**package com.mytrip.client;**

**import java.util.List;**

**import com.airline.Flight;**

**import com.mytrip.TicketSearchImpl;**

**import com.mytrip.TicketSearchImplService;**

**public class TicketClientMain {**

**public static void main(String[] args) {**

**System.*out*.println("Search Starts");**

**TicketSearchImpl ticketSearchService = new TicketSearchImplService().getTicketSearchImplPort();**

**List<Flight> availableFlights = ticketSearchService.getFlightsByDate("12-11-2020", "CJB", "MAS");**

**System.*out*.println("Available Flights");**

**for(Flight xFlight:availableFlights){**

**System.*out*.println(xFlight.getFlightNumber()+"--"+xFlight.getDate()+"--"+xFlight.getSource()+"--"+xFlight.getDestination()+"--"+xFlight.getFare());**

**}**

**Flight lowFareFlight = ticketSearchService.getLowestFareByDate("12-11-2020", "CJB", "MAS");**

**System.*out*.println("lowestFairFlight:"+lowFareFlight.getFlightNumber()+"--"+lowFareFlight.getFare()+"--No of Available Seats:"+lowFareFlight.getSeatsAvailable());**

**System.*out*.println("Search Ends");**

**}**

**}**

[**http://localhost:5000/spicejet?wsdl**](http://localhost:5000/spicejet?wsdl)

This XML file does not appear to have any style information associated with it. The document tree is shown below.

<!-- Published by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<!-- Generated by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<definitions xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" xmlns:wsp="http://www.w3.org/ns/ws-policy" xmlns:wsp1\_2="http://schemas.xmlsoap.org/ws/2004/09/policy" xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://airline.com/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://airline.com/" name="SpiceJetService">

<types>

<xsd:schema>

<xsd:import namespace="http://airline.com/" schemaLocation="http://localhost:5000/spicejet?xsd=1"/>

</xsd:schema>

</types>

<message name="addFlight">

<part name="parameters" element="tns:addFlight"/>

</message>

<message name="addFlightResponse">

<part name="parameters" element="tns:addFlightResponse"/>

</message>

<message name="checkTicketAvailability">

<part name="parameters" element="tns:checkTicketAvailability"/>

</message>

<message name="checkTicketAvailabilityResponse">

<part name="parameters" element="tns:checkTicketAvailabilityResponse"/>

</message>

<message name="getFare">

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</message>

<message name="getFareResponse">

<part name="parameters" element="tns:getFareResponse"/>

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<message name="setFlightsResponse">

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</message>

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</message>

<message name="getFlightsResponse">

<part name="parameters" element="tns:getFlightsResponse"/>

</message>

<message name="removeFlight">

<part name="parameters" element="tns:removeFlight"/>

</message>

<message name="removeFlightResponse">

<part name="parameters" element="tns:removeFlightResponse"/>

</message>

<message name="setAirlineName">

<part name="parameters" element="tns:setAirlineName"/>

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<message name="setAirlineNameResponse">

<part name="parameters" element="tns:setAirlineNameResponse"/>

</message>

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<operation name="addFlight">

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<output wsam:Action="http://airline.com/SpiceJet/addFlightResponse" message="tns:addFlightResponse"/>

</operation>

<operation name="checkTicketAvailability">

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</operation>

<operation name="getFare">

<input wsam:Action="http://airline.com/SpiceJet/getFareRequest" message="tns:getFare"/>

<output wsam:Action="http://airline.com/SpiceJet/getFareResponse" message="tns:getFareResponse"/>

</operation>

<operation name="setFlights">

<input wsam:Action="http://airline.com/SpiceJet/setFlightsRequest" message="tns:setFlights"/>

<output wsam:Action="http://airline.com/SpiceJet/setFlightsResponse" message="tns:setFlightsResponse"/>

</operation>

<operation name="getAirlineName">

<input wsam:Action="http://airline.com/SpiceJet/getAirlineNameRequest" message="tns:getAirlineName"/>

<output wsam:Action="http://airline.com/SpiceJet/getAirlineNameResponse" message="tns:getAirlineNameResponse"/>

</operation>

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<output wsam:Action="http://airline.com/SpiceJet/getFlightsResponse" message="tns:getFlightsResponse"/>

</operation>

<operation name="removeFlight">

<input wsam:Action="http://airline.com/SpiceJet/removeFlightRequest" message="tns:removeFlight"/>

<output wsam:Action="http://airline.com/SpiceJet/removeFlightResponse" message="tns:removeFlightResponse"/>

</operation>

<operation name="setAirlineName">

<input wsam:Action="http://airline.com/SpiceJet/setAirlineNameRequest" message="tns:setAirlineName"/>

<output wsam:Action="http://airline.com/SpiceJet/setAirlineNameResponse" message="tns:setAirlineNameResponse"/>

</operation>

</portType>

<binding name="SpiceJetPortBinding" type="tns:SpiceJet">

<soap:binding transport="http://schemas.xmlsoap.org/soap/http" style="document"/>

<operation name="addFlight">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="checkTicketAvailability">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getFare">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="setFlights">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getAirlineName">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getFlights">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="removeFlight">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="setAirlineName">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

</binding>

<service name="SpiceJetService">

<port name="SpiceJetPort" binding="tns:SpiceJetPortBinding">

<soap:address location="http://localhost:5000/spicejet"/>

</port>

</service>

</definitions>

[**http://localhost:5001/jetairways?wsdl**](http://localhost:5001/jetairways?wsdl)

This XML file does not appear to have any style information associated with it. The document tree is shown below.

<!-- Published by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<!-- Generated by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<definitions xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" xmlns:wsp="http://www.w3.org/ns/ws-policy" xmlns:wsp1\_2="http://schemas.xmlsoap.org/ws/2004/09/policy" xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://airline.com/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://airline.com/" name="JetAirwaysService">

<types>

<xsd:schema>

<xsd:import namespace="http://airline.com/" schemaLocation="http://localhost:5001/jetairways?xsd=1"/>

</xsd:schema>

</types>

<message name="removeFlight">

<part name="parameters" element="tns:removeFlight"/>

</message>

<message name="removeFlightResponse">

<part name="parameters" element="tns:removeFlightResponse"/>

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<message name="setFlights">

<part name="parameters" element="tns:setFlights"/>

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<message name="setFlightsResponse">

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</message>

<message name="getFare">

<part name="parameters" element="tns:getFare"/>

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<message name="getFareResponse">

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<message name="addFlight">

<part name="parameters" element="tns:addFlight"/>

</message>

<message name="addFlightResponse">

<part name="parameters" element="tns:addFlightResponse"/>

</message>

<message name="setAirlineName">

<part name="parameters" element="tns:setAirlineName"/>

</message>

<message name="setAirlineNameResponse">

<part name="parameters" element="tns:setAirlineNameResponse"/>

</message>

<message name="checkTicketAvailability">

<part name="parameters" element="tns:checkTicketAvailability"/>

</message>

<message name="checkTicketAvailabilityResponse">

<part name="parameters" element="tns:checkTicketAvailabilityResponse"/>

</message>

<portType name="JetAirways">

<operation name="removeFlight">

<input wsam:Action="http://airline.com/JetAirways/removeFlightRequest" message="tns:removeFlight"/>

<output wsam:Action="http://airline.com/JetAirways/removeFlightResponse" message="tns:removeFlightResponse"/>

</operation>

<operation name="setFlights">

<input wsam:Action="http://airline.com/JetAirways/setFlightsRequest" message="tns:setFlights"/>

<output wsam:Action="http://airline.com/JetAirways/setFlightsResponse" message="tns:setFlightsResponse"/>

</operation>

<operation name="getFare">

<input wsam:Action="http://airline.com/JetAirways/getFareRequest" message="tns:getFare"/>

<output wsam:Action="http://airline.com/JetAirways/getFareResponse" message="tns:getFareResponse"/>

</operation>

<operation name="getFlights">

<input wsam:Action="http://airline.com/JetAirways/getFlightsRequest" message="tns:getFlights"/>

<output wsam:Action="http://airline.com/JetAirways/getFlightsResponse" message="tns:getFlightsResponse"/>

</operation>

<operation name="getAirlineName">

<input wsam:Action="http://airline.com/JetAirways/getAirlineNameRequest" message="tns:getAirlineName"/>

<output wsam:Action="http://airline.com/JetAirways/getAirlineNameResponse" message="tns:getAirlineNameResponse"/>

</operation>

<operation name="addFlight">

<input wsam:Action="http://airline.com/JetAirways/addFlightRequest" message="tns:addFlight"/>

<output wsam:Action="http://airline.com/JetAirways/addFlightResponse" message="tns:addFlightResponse"/>

</operation>

<operation name="setAirlineName">

<input wsam:Action="http://airline.com/JetAirways/setAirlineNameRequest" message="tns:setAirlineName"/>

<output wsam:Action="http://airline.com/JetAirways/setAirlineNameResponse" message="tns:setAirlineNameResponse"/>

</operation>

<operation name="checkTicketAvailability">

<input wsam:Action="http://airline.com/JetAirways/checkTicketAvailabilityRequest" message="tns:checkTicketAvailability"/>

<output wsam:Action="http://airline.com/JetAirways/checkTicketAvailabilityResponse" message="tns:checkTicketAvailabilityResponse"/>

</operation>

</portType>

<binding name="JetAirwaysPortBinding" type="tns:JetAirways">

<soap:binding transport="http://schemas.xmlsoap.org/soap/http" style="document"/>

<operation name="removeFlight">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="setFlights">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getFare">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getFlights">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getAirlineName">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="addFlight">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="setAirlineName">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="checkTicketAvailability">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

</binding>

<service name="JetAirwaysService">

<port name="JetAirwaysPort" binding="tns:JetAirwaysPortBinding">

<soap:address location="http://localhost:5001/jetairways"/>

</port>

</service>

</definitions>

[**http://localhost:5002/ticketservice?wsdl**](http://localhost:5002/ticketservice?wsdl)

This XML file does not appear to have any style information associated with it. The document tree is shown below.

<!-- Published by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<!-- Generated by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<definitions xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" xmlns:wsp="http://www.w3.org/ns/ws-policy" xmlns:wsp1\_2="http://schemas.xmlsoap.org/ws/2004/09/policy" xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://mytrip.com/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://mytrip.com/" name="TicketSearchImplService">

<types>

<xsd:schema>

<xsd:import namespace="http://mytrip.com/" schemaLocation="http://localhost:5002/ticketservice?xsd=1"/>

</xsd:schema>

<xsd:schema>

<xsd:import namespace="http://airline.com/" schemaLocation="http://localhost:5002/ticketservice?xsd=2"/>

</xsd:schema>

</types>

<message name="getFlightsByDate">

<part name="parameters" element="tns:getFlightsByDate"/>

</message>

<message name="getFlightsByDateResponse">

<part name="parameters" element="tns:getFlightsByDateResponse"/>

</message>

<message name="getLowestFareByDate">

<part name="parameters" element="tns:getLowestFareByDate"/>

</message>

<message name="getLowestFareByDateResponse">

<part name="parameters" element="tns:getLowestFareByDateResponse"/>

</message>

<portType name="TicketSearchImpl">

<operation name="getFlightsByDate">

<input wsam:Action="http://mytrip.com/TicketSearchImpl/getFlightsByDateRequest" message="tns:getFlightsByDate"/>

<output wsam:Action="http://mytrip.com/TicketSearchImpl/getFlightsByDateResponse" message="tns:getFlightsByDateResponse"/>

</operation>

<operation name="getLowestFareByDate">

<input wsam:Action="http://mytrip.com/TicketSearchImpl/getLowestFareByDateRequest" message="tns:getLowestFareByDate"/>

<output wsam:Action="http://mytrip.com/TicketSearchImpl/getLowestFareByDateResponse" message="tns:getLowestFareByDateResponse"/>

</operation>

</portType>

<binding name="TicketSearchImplPortBinding" type="tns:TicketSearchImpl">

<soap:binding transport="http://schemas.xmlsoap.org/soap/http" style="document"/>

<operation name="getFlightsByDate">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getLowestFareByDate">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

</binding>

<service name="TicketSearchImplService">

<port name="TicketSearchImplPort" binding="tns:TicketSearchImplPortBinding">

<soap:address location="http://localhost:5002/ticketservice"/>

</port>

</service>

</definitions>

**OUTPUT**

This XML file does not appear to have any style information associated with it. The document tree is shown below.

<!-- Published by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<!-- Generated by JAX-WS RI (http://jax-ws.java.net). RI's version is JAX-WS RI 2.2.9-b130926.1035 svn-revision#5f6196f2b90e9460065a4c2f4e30e065b245e51e. -->

<definitions xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd" xmlns:wsp="http://www.w3.org/ns/ws-policy" xmlns:wsp1\_2="http://schemas.xmlsoap.org/ws/2004/09/policy" xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:tns="http://airline.com/" xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://airline.com/" name="SpiceJetService">

<types>

<xsd:schema>

<xsd:import namespace="http://airline.com/" schemaLocation="http://localhost:5000/spicejet?xsd=1"/>

</xsd:schema>

</types>

<message name="addFlight">

<part name="parameters" element="tns:addFlight"/>

</message>

<message name="addFlightResponse">

<part name="parameters" element="tns:addFlightResponse"/>

</message>

<message name="checkTicketAvailability">

<part name="parameters" element="tns:checkTicketAvailability"/>

</message>

<message name="checkTicketAvailabilityResponse">

<part name="parameters" element="tns:checkTicketAvailabilityResponse"/>

</message>

<message name="getFare">

<part name="parameters" element="tns:getFare"/>

</message>

<message name="getFareResponse">

<part name="parameters" element="tns:getFareResponse"/>

</message>

<message name="setFlights">

<part name="parameters" element="tns:setFlights"/>

</message>

<message name="setFlightsResponse">

<part name="parameters" element="tns:setFlightsResponse"/>

</message>

<message name="getAirlineName">

<part name="parameters" element="tns:getAirlineName"/>

</message>

<message name="getAirlineNameResponse">

<part name="parameters" element="tns:getAirlineNameResponse"/>

</message>

<message name="getFlights">

<part name="parameters" element="tns:getFlights"/>

</message>

<message name="getFlightsResponse">

<part name="parameters" element="tns:getFlightsResponse"/>

</message>

<message name="removeFlight">

<part name="parameters" element="tns:removeFlight"/>

</message>

<message name="removeFlightResponse">

<part name="parameters" element="tns:removeFlightResponse"/>

</message>

<message name="setAirlineName">

<part name="parameters" element="tns:setAirlineName"/>

</message>

<message name="setAirlineNameResponse">

<part name="parameters" element="tns:setAirlineNameResponse"/>

</message>

<portType name="SpiceJet">

<operation name="addFlight">

<input wsam:Action="http://airline.com/SpiceJet/addFlightRequest" message="tns:addFlight"/>

<output wsam:Action="http://airline.com/SpiceJet/addFlightResponse" message="tns:addFlightResponse"/>

</operation>

<operation name="checkTicketAvailability">

<input wsam:Action="http://airline.com/SpiceJet/checkTicketAvailabilityRequest" message="tns:checkTicketAvailability"/>

<output wsam:Action="http://airline.com/SpiceJet/checkTicketAvailabilityResponse" message="tns:checkTicketAvailabilityResponse"/>

</operation>

<operation name="getFare">

<input wsam:Action="http://airline.com/SpiceJet/getFareRequest" message="tns:getFare"/>

<output wsam:Action="http://airline.com/SpiceJet/getFareResponse" message="tns:getFareResponse"/>

</operation>

<operation name="setFlights">

<input wsam:Action="http://airline.com/SpiceJet/setFlightsRequest" message="tns:setFlights"/>

<output wsam:Action="http://airline.com/SpiceJet/setFlightsResponse" message="tns:setFlightsResponse"/>

</operation>

<operation name="getAirlineName">

<input wsam:Action="http://airline.com/SpiceJet/getAirlineNameRequest" message="tns:getAirlineName"/>

<output wsam:Action="http://airline.com/SpiceJet/getAirlineNameResponse" message="tns:getAirlineNameResponse"/>

</operation>

<operation name="getFlights">

<input wsam:Action="http://airline.com/SpiceJet/getFlightsRequest" message="tns:getFlights"/>

<output wsam:Action="http://airline.com/SpiceJet/getFlightsResponse" message="tns:getFlightsResponse"/>

</operation>

<operation name="removeFlight">

<input wsam:Action="http://airline.com/SpiceJet/removeFlightRequest" message="tns:removeFlight"/>

<output wsam:Action="http://airline.com/SpiceJet/removeFlightResponse" message="tns:removeFlightResponse"/>

</operation>

<operation name="setAirlineName">

<input wsam:Action="http://airline.com/SpiceJet/setAirlineNameRequest" message="tns:setAirlineName"/>

<output wsam:Action="http://airline.com/SpiceJet/setAirlineNameResponse" message="tns:setAirlineNameResponse"/>

</operation>

</portType>

<binding name="SpiceJetPortBinding" type="tns:SpiceJet">

<soap:binding transport="http://schemas.xmlsoap.org/soap/http" style="document"/>

<operation name="addFlight">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="checkTicketAvailability">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getFare">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="setFlights">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getAirlineName">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="getFlights">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="removeFlight">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

<operation name="setAirlineName">

<soap:operation soapAction=""/>

<input>

<soap:body use="literal"/>

</input>

<output>

<soap:body use="literal"/>

</output>

</operation>

</binding>

<service name="SpiceJetService">

<port name="SpiceJetPort" binding="tns:SpiceJetPortBinding">

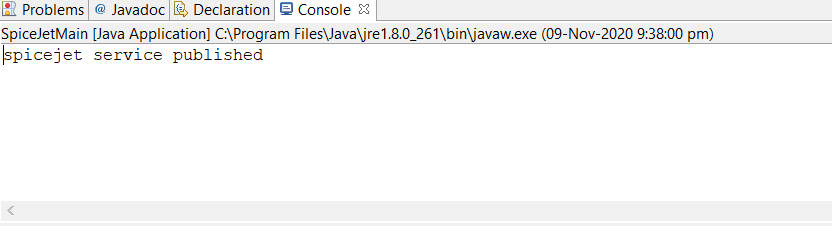
<soap:address location="http://localhost:5000/spicejet"/>

</port>

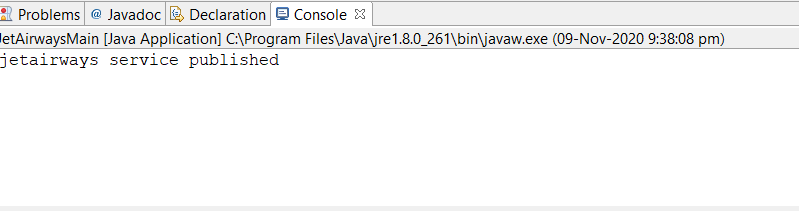
</service>

</definitions>

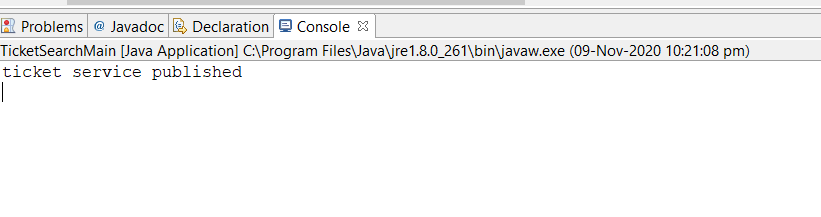
**SpiceJet Service Running**

****

**JetAirways Service Running**

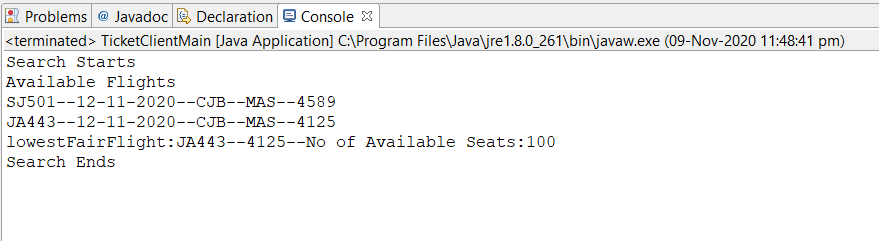
****

**Ticket Service Running**

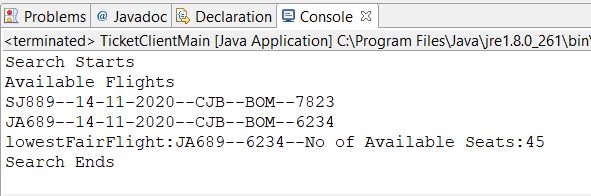
****

**Ticket Client**

**Case 1: CJB - MAS**

****

**Case 2: CJB - BOM**

****

**RESULT:**

A web service application that has airline service, ticketing service and a client application that uses the ticketing service to get basic details of flight from different airlines was created and tested successfully.