

ASSIGNMENT-6

CS-548

Fall 2016

Submitted By:-

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In this assignment, you define a SOA for the domain-driven design that you developed in the previous assignment. You will define data transfer objects (DTOs) for your SOA. You will define service façades that provide access to your domain model in terms of DTOs transferred to and from clients. You will define a Web service (SOAP and WSDL) interface for clients that want to access your application over the Web.

Some of the important points

1. DTOs that were defined using XML Schema
 - PatientDTO
 - ProviderDTO
 - TreatmentDTO

DTOs were defined by generating JAXB Classes from the XML Schema of Patient, Provider and Treatment. In addition, Object Factory and package-info were also generated and subclasses of Treatment Types, DrugTreatmentType, RadiologyType, SurgeryType

2. After DTOs were defined, Server Facades were defined too
 - PatientService implementing its IPatientService interface, and ProviderService implementing IProviderService interface. These service facades are stateless ejb beans that injects Entity Manager object to Initialization or Startup Bean called InitBean of class ClinicInit
3. Web Service was also defined called PatientWebService and ProviderWebService in class ClinicWebService. The above web services class Interfaces has @SoapBinding and @WebService annotations that declare the name and target namespace for the service like in <http://cs548.stevens.edu/clinic/service/web/soap>

Below are the xml schema of the dto and the wsdl file

The XML Schema of the DTOs are –(Patient.xsd was given to us in the startup code)

Provider.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://cs548.stevens.edu/clinic/dto"
  xmlns:jaxb="http://java.sun.com/xml/ns/jaxb"
  elementFormDefault="unqualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:tns="http://cs548.stevens.edu/clinic/dto">

  <element name="provider-dto">
    <complexType>
      <sequence>
        <element name="provider-id" type="long"/>
        <element name="name" type="string"/>
        <element name="specialization" type="string"/>
        <element name="treatments" type="long" minOccurs="0"
maxOccurs="unbounded"/>
      </sequence>
    </complexType>
  </element>
  <simpleType name="specializationType">
    <restriction base="string">
      <enumeration value="Radiology"/>
      <enumeration value="Surgery"/>
      <enumeration value="Oncology"/>
      <enumeration value="Internist"/>
    </restriction>
  </simpleType>
</schema>
```

Treatment.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  targetNamespace="http://cs548.stevens.edu/clinic/dto"
  xmlns:jaxb="http://java.sun.com/xml/ns/jaxb"
  jaxb:version="2.0">
```

```

        elementFormDefault="qualified"
xmlns="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://cs548.stevens.edu/clinic/dto">
    <annotation>
        <appinfo>
            <jaxb:globalBindings>
                <jaxb:javaType
                    name="java.util.Date"
                    xmlType="date"

                    parseMethod="edu.stevens.cs548.clinic.service.dto.DateAdapter.parseDate"

                    printMethod="edu.stevens.cs548.clinic.service.dto.DateAdapter.printDate"
                />
            </jaxb:globalBindings>
        </appinfo>
    </annotation>

```

```

<element name="treatment-dto">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="Diagnosis" type="xs:string"/>
            <xs:choice>
                <xs:element name="drug-treatment" type="tns:DrugTreatmentType"/>
                <xs:element name="Radiology" type="tns:RadiologyType"/>
                <xs:element name="Surgery" type="tns:SurgeryType"/>
            </xs:choice>
        </xs:sequence>
    </xs:complexType>
</element>
<xs:complexType name="DrugTreatmentType">
    <xs:sequence>
        <xs:element name="name" type="xs:string"/>
        <xs:element name="diagnosis" type="xs:string"/>
        <xs:element name="prescribingPhysician" type="xs:string"/>
        <xs:element name="dosage" type="xs:float"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="RadiologyType">
    <xs:sequence>
        <xs:element maxOccurs="unbounded" name="date" type="xs:date"/>
    </xs:sequence>
</xs:complexType>

```

```

        <xs:element name="radiologist" type="xs:string"/>
        <xs:element name="diagnosis" type="xs:string"/>
    </xs:sequence>
</xs:complexType>
<xs:complexType name="SurgeryType">
    <xs:sequence>
        <xs:element name="date" type="xs:date"/>
        <xs:element name="diagnosis" type="xs:string"/>
        <xs:element name="surgeon" type="xs:string"/>
    </xs:sequence>
</xs:complexType>

</xs:schema>

```

WSDL File(also in root folder as PatientWeb.xml)

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 Metro/2.3.1-b419
(branches/2.3.1.x-7937; 2014-08-04T08:11:03+0000) JAXWS-RI/2.2.10-b140803.1500 JAXWS-
API/2.2.11 JAXB-RI/2.2.10-b140802.1033 JAXB-API/2.2.12-b140109.1041 svn-revision#unknown.
-->
<!--
Generated by JAX-WS RI (http://jax-ws.java.net). RI's version is Metro/2.3.1-b419
(branches/2.3.1.x-7937; 2014-08-04T08:11:03+0000) JAXWS-RI/2.2.10-b140803.1500 JAXWS-
API/2.2.11 JAXB-RI/2.2.10-b140802.1033 JAXB-API/2.2.12-b140109.1041 svn-revision#unknown.
-->
<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://w
ww.w3.org/2007/05/addressing/metadata" xmlns:soap="http://schemas.xmlsoap.org/wsdl/soa
p/" xmlns:tns="http://cs548.stevens.edu/clinic/service/web/soap" xmlns:xsd="http://www.w3.o
rg/2001/XMLSchema" xmlns="http://schemas.xmlsoap.org/wsdl/" targetNamespace="http://cs5
48.stevens.edu/clinic/service/web/soap" name="PatientWeb">
<types>
<xsd:schema>
<xsd:import namespace="http://cs548.stevens.edu/clinic/service/web/soap" schemaLocation="
http://yugaank:8080/ClinicWebService/PatientWeb?xsd=1"/>
</xsd:schema>
<xsd:schema>
<xsd:import namespace="http://cs548.stevens.edu/clinic/dto" schemaLocation="http://yugaan
k:8080/ClinicWebService/PatientWeb?xsd=2"/>

```

```
</xsd:schema>
</types>
<message name="siteInfo">
<part name="parameters" element="tns:siteInfo"/>
</message>
<message name="siteInfoResponse">
<part name="parameters" element="tns:siteInfoResponse"/>
</message>
<message name="getPatient">
<part name="parameters" element="tns:getPatient"/>
</message>
<message name="getPatientResponse">
<part name="parameters" element="tns:getPatientResponse"/>
</message>
<message name="PatientServiceExn">
<part name="fault" element="tns:PatientServiceExn"/>
</message>
<message name="addPatient">
<part name="parameters" element="tns:addPatient"/>
</message>
<message name="addPatientResponse">
<part name="parameters" element="tns:addPatientResponse"/>
</message>
<message name="getPatientByPatId">
<part name="parameters" element="tns:getPatientByPatId"/>
</message>
<message name="getPatientByPatIdResponse">
<part name="parameters" element="tns:getPatientByPatIdResponse"/>
</message>
<message name="patientGetTreatment">
<part name="parameters" element="tns:patientGetTreatment"/>
</message>
<message name="patientGetTreatmentResponse">
<part name="parameters" element="tns:patientGetTreatmentResponse"/>
</message>
<message name="PatientNotFoundExn">
<part name="fault" element="tns:PatientNotFoundExn"/>
</message>
<message name="TreatmentNotFoundExn">
<part name="fault" element="tns:TreatmentNotFoundExn"/>
</message>
<portType name="IPatientWebPort">
```

```

<operation name="siteInfo">
<input wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/siteInfoRequest" message="tns:siteInfo"/>
<output wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/siteInfoResponse" message="tns:siteInfoResponse"/>
</operation>
<operation name="getPatient">
<input wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/getPatientRequest" message="tns:getPatient"/>
<output wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/getPatientResponse" message="tns:getPatientResponse"/>
<fault message="tns:PatientServiceExn" name="PatientServiceExn" wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/getPatient/Fault/PatientServiceExn"/>
</operation>
<operation name="addPatient">
<input wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/addPatientRequest" message="tns:addPatient"/>
<output wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/addPatientResponse" message="tns:addPatientResponse"/>
<fault message="tns:PatientServiceExn" name="PatientServiceExn" wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/addPatient/Fault/PatientServiceExn"/>
</operation>
<operation name="getPatientByPatId">
<input wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/getPatientByPatIdRequest" message="tns:getPatientByPatId"/>
<output wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/getPatientByPatIdResponse" message="tns:getPatientByPatIdResponse"/>
<fault message="tns:PatientServiceExn" name="PatientServiceExn" wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/getPatientByPatId/Fault/PatientServiceExn"/>
</operation>
<operation name="patientGetTreatment">
<input wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/patientGetTreatmentRequest" message="tns:patientGetTreatment"/>
<output wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/patientGetTreatmentResponse" message="tns:patientGetTreatmentResponse"/>
<fault message="tns:PatientNotFoundExn" name="PatientNotFoundExn" wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/patientGetTreatment/Fault/PatientNotFoundExn"/>
<fault message="tns:TreatmentNotFoundExn" name="TreatmentNotFoundExn" wsam:Action="http://cs548.stevens.edu/clinic/service/web/soap/IPatientWebPort/patientGetTreatment/Fault/TreatmentNotFoundExn"/>

```

```
<fault message="tns:PatientServiceExn" name="PatientServiceExn" wsam:Action="http://cs548.s
tevens.edu/clinic/service/web/soap/IPatientWebPort/patientGetTreatment/Fault/PatientServic
eExn"/>
</operation>
</portType>
<binding name="PatientWebBinding" type="tns:IPatientWebPort">
<soap:binding transport="http://schemas.xmlsoap.org/soap/http" style="document"/>
<operation name="siteInfo">
<soap:operation soapAction=""/>
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
</operation>
<operation name="getPatient">
<soap:operation soapAction=""/>
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
<fault name="PatientServiceExn">
<soap:fault name="PatientServiceExn" use="literal"/>
</fault>
</operation>
<operation name="addPatient">
<soap:operation soapAction=""/>
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
<fault name="PatientServiceExn">
<soap:fault name="PatientServiceExn" use="literal"/>
</fault>
</operation>
<operation name="getPatientByPatId">
<soap:operation soapAction=""/>
```

```
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
<fault name="PatientServiceExn">
<soap:fault name="PatientServiceExn" use="literal"/>
</fault>
</operation>
<operation name="patientGetTreatment">
<soap:operation soapAction=""/>
<input>
<soap:body use="literal"/>
</input>
<output>
<soap:body use="literal"/>
</output>
<fault name="PatientNotFoundExn">
<soap:fault name="PatientNotFoundExn" use="literal"/>
</fault>
<fault name="TreatmentNotFoundExn">
<soap:fault name="TreatmentNotFoundExn" use="literal"/>
</fault>
<fault name="PatientServiceExn">
<soap:fault name="PatientServiceExn" use="literal"/>
</fault>
</operation>
</binding>
<service name="PatientWeb">
<port name="PatientWeb" binding="tns:PatientWebBinding">
<soap:address location="http://yugaank:8080/ClinicWebService/PatientWeb"/>
</port>
</service>
</definitions>
```