

Web Services & Semantic Web Tutorial

Question 1

Look at the WSDL document overleaf. Write an HTTP request containing a SOAP message to the service to ask what the weather will be like in the region "London" on the date "2009-12-25". Assume the SOAP message header is empty.

Question 2

Write an HTTP response message in reply to the above request, where the weather is reported as "snow" for a duration of "PT15H" (which is XML Schema's way of saying 15 hours). Again assume the SOAP message header is empty.

Question 3

An XHTML page contains only the following:

- A heading, "Colours I like"
- A bullet list with two items: "Aquamarine" and "Burgundy"

Write out the XHTML page including RDFa annotations to embed the following three statements into the page:

- The webpage has the title given in the heading, using predicate `http://purl.org/dc/terms/title`.
- The resource `http://www.inf.kcl.ac.uk/staff/simonm` is related to the first colour in the list by the predicate `http://www.example.org/preferences/likes`.
- The same resource is related in the same way as above to the second colour in the list.

```

<definitions name = "UKWeather" xmlns = "http://schemas.xmlsoap.org/wsdl"
    targetNamespace = "http://www.inf.kcl.ac.uk/smiles/weather"
    xmlns:tns = "http://www.inf.kcl.ac.uk/smiles/weather"
    xmlns:soap = "http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xs = "http://www.w3.org/2001/XMLSchema">
  <types>
    <xs:schema>
      <xs:element name = "WeatherQuestion">
        <xs:complexType>
          <xs:sequence>
            <xs:element name = "region" type = "xs:string"/>
            <xs:element name = "date" type = "xs:date"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name = "Weather">
        <xs:complexType>
          <xs:choice>
            <xs:element name = "rain" type = "xs:duration"/>
            <xs:element name = "snow" type = "xs:duration"/>
            <xs:element name = "sun" type = "xs:duration"/>
          </xs:choice>
        </xs:complexType>
      </xs:element>
    </xs:schema>
  </types>

  <message name = "WeatherQuery">
    <part name = "body" element = "tns:WeatherQuestion"/>
  </message>
  <message name = "WeatherResponse">
    <part name = "body" element = "tns:Weather"/>
  </message>
  <portType name = "WeatherQueryPortType">
    <operation name = "WeatherQuery">
      <input message = "tns:WeatherQuery"/>
      <output message = "tns:WeatherResponse"/>
    </operation>
  </portType>

  <binding name = "WeatherSoapBinding" type = "tns:WeatherQueryPortType">
    <soap:binding style = "document"
      transport = "http://schemas.xmlsoap.org/soap/http"/>
    <operation name = "WeatherQuery">
      <soap:operation
        soapAction="http://www.inf.kcl.ac.uk/smiles/weather/Query"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use = "literal"/>
      </wsdl:output>
    </operation>
  </binding>
  <service name = "UKWeatherService">
    <port name = "WeatherQueryPort" binding = "tns:WeatherSoapBinding">
      <soap:address location = "http://www.inf.kcl.ac.uk:8080/weather"/>
    </port>
  </service>
</definitions>

```