W3C Web Services Activity, http://www.w3.org/2002/ws/
W3C Recommendations

- Semantic Annotations for WSDL and XML Schema
- SOAP Message Transmission Optimization Mechanism
- SOAP Resource Representation Header
- SOAP Version 1.2 Part 0: Primer
- SOAP Version 1.2 Part 1: Messaging Framework
- SOAP Version 1.2 Part 2: Adjuncts
- SOAP Version 1.2 Specification Assertions and Test Collection
- Web Services Addressing 1.0 - Core
- Web Services Addressing 1.0 - Metadata
- Web Services Addressing 1.0 - SOAP Binding
- Web Services Description Language (WSDL) Version 2.0 Part 0: Primer
- Web Services Description Language (WSDL) Version 2.0 Part 1: Core Language
- Web Services Description Language (WSDL) Version 2.0 Part 2: Adjuncts as Recommendation.
- Web Services Policy 1.5 - Framework
- Web Services Policy 1.5 - Attachment

WSDL Standards
- WSDL 1.1, http://www.w3.org/TR/wsdl
- WSDL 2.0

WSDL Editor

WSDL 2.0 Tools
- WSDL 1.1 to WSDL 2.0 converter, http://www.w3.org/2006/02/WSDLConvert.html
- Annotated stylesheets for WSDL 2.0,

WSDL References
- WSDL Tutorial, http://www.w3schools.com/WSDL/default.asp
• WSDL Tutorial, [http://www.tutorialspoint.com/wSDL/](http://www.tutorialspoint.com/wSDL/)

**Web Service Contract**

• A collection of metadata that describe various aspects of an underlying software
  o The purpose and function of its operations
  o The message that need to be exchanged in order to engage the operations
  o Data models used to define the structure of the message (and associated validation rules used to ensure the integrity of data passed to and from the messages)
  o A set of conditions under which the operations are provided
  o Information about how and where the service can be accessed

• What a service offers?
  o Purpose of the service
  o Its capability

• How a service can be accessed?

• Where a service can be accesses?

**WSDL (Web Service Description Language)**

• An XM language for describing a programmatic interface to a Web service

• The description includes
  o Definitions of data types
  o Input and output message formats
  o The operations provided by the service
  o Network addresses, and
  o Protocol binding
WSDL 1.1 DOCUMENT STRUCTURE

<!— ABSTRACT DESCRIPTION -->
<definitions>
   <document>  </document>
   <types>
      <!--    .... -->
   </types>
   <message>
      <part>   </part>
   </message>
   <portType>
      <operation>
         <input message />
         <output message />
         <fault message />
      </operation>
   </portType>
</definitions>
<!— END ABSTRACT DESCRIPTION -->

<!— BEGIN CONCRETE DESCRIPTION -->

<!-- BEGIN CONCRETE DESCRIPTION -->
<binding>
   <operation>
      <input>    </input>
      <output>   </output>
   </operation>
   <operation>
      <input>    </input>
      <output>   </output>
   </operation>
...
</binding>

<binding>
   <operation>
      <input>    </input>
      <output>   </output>
   </operation>
   <operation>
      <input>    </input>
      <output>   </output>
   </operation>
...
</binding>

<service>
   <port>  </port>
   <port>  </port>
   <port>  </port>
      <output>  </output>
      <operation>
WSDL 2.0 DOCUMENT STRUCTURE

- definitions => description
- portType => interface
- port => endpoint

PurchaseOrder Service Contract - Case Study Example from [2].

An example from [1], Listing 2.4: A WSDL example for 
http://people.engr.ncsu.edu/mpsingh/books/SOC/lst/basics/wsdl-short.xml

- Services
  - GetTemp [City string, When string]
  - GetTempRequest – of type GetTemp
  - GetTempResponse [DegreeCelsius integer]
  - GetTempFault [errorMessage string]
- wsdl:message – Elements describe potential transactions
- wsdl:portType – Describes messages in an operation
  - wsdl:operation Describes the entire protocol from input to output or fault
    <wsdl:operation name="GetTempPortType">
      <wsdl:input message="ts:GetTempRequest"/>
      <wsdl:output message="ts:GetTempResponse"/>
      <wsdl:fault message="ts:GetTempfault"/>
    </wsdl:operation>
  </wsdl:portType>
- Data Type Declaration – expressed in XML Schema - xsd

Discussion of Homework Assignment 6: WSDL and XSD files

XML Spy Demo given by Josh Prowant

Reference