SOAPUI/REST SERVICES

1. **What is web service?**

Web services are web components that transfer data between client and server. Client sends a web request to the server and the server then responds to client. The response and request are related and different requests evoke the corresponding response.

Web Service is a web component or software program that can be accessed on the Internet. It is mainly used to communicate with the web based applications through XML messaging concepts. For example, if we want to access a particular location using Google Maps, we can use the corresponding web service URL. For that we have to pass the appropriate inputs.

**2) What is XML and what will be the format?**

*XML is a file extension for an*[*Extensible Markup Language*](http://searchsoa.techtarget.com/definition/XML)*(XML) file format used to create common*[*information*](http://searchsqlserver.techtarget.com/definition/information)*formats and share both the format and the*[*data*](http://searchdatamanagement.techtarget.com/definition/data)*on the World Wide Web, intranets, and elsewhere using standard ASCII text.*

*XML is similar to*[*HTML*](http://searchsoa.techtarget.com/definition/HTML)*. Both XML and HTML contain*[*markup*](http://searchsoa.techtarget.com/definition/markup)*symbols to describe the contents of a page or file*.

Format of XML:

<note>  
  <to>Teacher</to>  
  <from>Student</from>  
  <heading>Wishes</heading>  
  <body>Good morning and have a good day</body>  
</note>

**3) What is requestxml and responseXML**

All modern browsers have a built-in XMLHttpRequest object to request data from a server.

All major browsers have a built-in XML parser to access and manipulate XML.

The XMLHttpRequest Object can be used to request data from a web server.

The XMLHttpRequest object is **a developers dream**, because you can:

* Update a web page without reloading the page
* Request data from a server - after the page has loaded
* Receive data from a server  - after the page has loaded
* Send data to a server - in the background

**4) Different http methods?**

 POST, GET, PUT, PATCH, and DELETE

**5) What is json and how is the format look like?**

**JSON** (JavaScript Object Notation) is a minimal, readable format for structuring data. It is used primarily to transmit data between a server and web application, as an alternative to XML. Squarespace uses JSON to store and organize site content created with the CMS

**Format:**

{"employees":[  
    {"firstName":"John", "lastName":"Doe"},  
    {"firstName":"Anna", "lastName":"Smith"},  
    {"firstName":"Peter", "lastName":"Jones"}  
]}

**6) Difference is soap web service and rest web service**

|  |  |
| --- | --- |
| SOAP | REST |
| SOAP stands for Simple Object Access Protocol. | REST stands for Representational State Transfer. |
| SOAP is a XML based messaging protocol. | REST is not a protocol but an architectural style. |
| SOAP has a standard specification. | REST has no standard specification. |
| Even SOAP based web services can be implemented in RESTful style. | REST is a concept that does not tie with any protocols. |
| SOAP is distributed computing style. | REST is web style (web is also a distributed computing model). |
| SOAP is XML based message protocol. | REST does not enforces message format as XML or JSON. |
| SOAP has specifications for stateful implementation. | REST follows stateless model. |
| SOAP is strongly typed, has strict specification for every part of implementation. | REST gives the concept and less restrictive about the implementation. |
| SOAP uses interfaces and named operations to expose business logic. | REST uses (generally) URI and methods like (GET, PUT, POST, DELETE) to expose resources. |

**7) Assertions in soapUI**

Assertion means act of affirming or stating something. It can also be interpreted as check once a request is sent to a web server a response is received. We need to validate if the response contains the data that we expect. In order to validate the response, we need to use assertions.

Types of assertions are:

* Property content
* Compliance status standard
* Script
* SLA
* JMS
* Security

**8) What is / and // in xpath?**

/: Selects from the root node.

//: Selects nodes in the document from the current node that match the selection no matter where they are.

**9) How to read attributes in xpath**

After you have figured how to select an element in your XML document, just take it one step further to get the attribute.

At the end of your XPath expression, which is normally the element you want to select, add at sign “@” plus the name of the attribute you wish to select. The following XPath expression selects chips element.

**10) Different functions in xpath (contains(), text() etc)**

### number last()

### number position()

### number count(node-set)

### node-set id(object)

### string local-name(node-set?)

### string string(object?)

### string concat(string, string, string\*)

### string starts-with(string, string)

### string contains(string, string)

**11) What are endpoint and operation names?**

WSDL is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information. The operations and messages are described abstractly, and then bound to a concrete network protocol and message format to define an endpoint. Related concrete endpoints are combined into abstract endpoints (services).

WSDL is extensible to allow description of endpoints and their messages regardless of what message formats or network protocols are used to communicate, however, the only bindings described in this document describe how to use WSDL in conjunction with SOAP 1.1, HTTP GET/POST, and MIME.

Sample SOAP UI example for Calculator













































