Jonathan Roland

WEB-420 RESTful APIs

11/1/2020

Instructor: Prof. Krasso

Discussion 3.1

SOAP is an acronym for Simple Object Access Protocol. This protocol describes a standardized method of transmitting and receiving data packets in an XML format. XML (eXtensible Markup Language), is a well documented and nearly universally supported markup language similar to HTML but with custom, user defined elements. Since SOAP is built with the intention of being a standardized and universally accepted data transmission protocol, XML is a great choice for data packaging as it has similar acceptance. SOAP is typically used to transmit not just data, but as a way to call to API functions to do things with that data.

SOAP transmits over HTTP (again, universal acceptance). A standard HTTP header is received with a specific header indicating a SOAP package is included. This package, also called the envelope, is stored in the body of the HTTP transmission. The XML contents in the envelope utilize a similar (though optional) header and body structure. The data points in this structure are referred to as nodes. The SOAP XML header may also contain data such as a public key for use in accessing API methods. In fact, the first item in the body is understood to be a reference to the API method in question, with child elements being relevant parameters for that method call. The data in these child nodes can be represented via XML as specific data types like strings or integers to further clarify them for the consuming method.

SOAP transmissions may be one-way, or they may receive a response. If a response is in order, the system which receives the SOAP request will respond in SOAP format as well. The SOAP envelope will contain similar information to the request, but the body will be changed to contain a response message. This is likewise encoded in XML.

References:

*What is SOAP? (Sun Java System Message Queue 4.3 Developer’s Guide for Java Clients)*. (n.d.). Oracle. Retrieved October 30, 2020, from <https://docs.oracle.com/cd/E19340-01/820-6767/aeqey/index.html>

Myer, T. (2020, August 27). *A Really, Really, Really Good Introduction to XML - SitePoint*. Sitepoint. <https://www.sitepoint.com/really-good-introduction-xml/>