

Service-Oriented Architectures and Web Services

Assignment 9
90 Points

Description: The object of this assignment is to student consider the two competing web service technology strategies we have studied thus far, and to develop a methodology for evaluating the technologies.

Learning outcomes:

- The student can identify and describe the primary issues related to the use of service-oriented architectures and service-oriented computing.
- The student can describe different quality attributes related to WSDL/SOAP and Representational State Transfer (REST).
- Secondary outcome: The student demonstrates an ability to think and communicate critically about common design tradeoff issues.

Activities:

In this assignment, you will investigate the two different Web Service technologies that we have used thus far (WSDL/SOAP and REST) and develop an argument regarding which technology is best suited for supporting organizational collaboration with Web Services. This assignment requires that you perform a literature search to find papers, presentations, and other resources that describe both technologies.

As part of this activity, you will develop criteria for choosing between the technologies. As you develop and identify the criterion, consider a number of quality attributes including (but not limited to) *cost*, *availability*, *standards*, *ease of use*, and *environment of the client application*. Other possible quality attributes for Web services can be found in the work by O'Brien et al [1], Offutt [2], and Fremantle et al. [3]. You should also consider the work by Brown and Wallnau [4] for the evaluation of software technology. Once you have developed your criterion, you will apply those criterion to the evaluation of WSDL/SOAP and REST to come at a decision, based on your opinion and perspective, while considering the perspectives identified in papers or other resources from your literature review.

The assignment should be documented using the following rationale template. Specifically, your paper should include the following sections:

Issue – The problem (SOAP or REST?)

Alternatives – Description of each technology

Criteria – Quality attributes that are used to differentiate between the alternatives

Argumentation – Arguments for and against each technology

Decisions – A decision; which technology should be used and why

As you write your paper, be sure to include all of your sources of information using proper citation style (APA or IEEE style; this assignment description uses IEEE).

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Rubric:

The rubric that will be used to evaluate your paper is shown below and is based on the rubric developed at Washington State University for critical and integrative thinking [5]. The rubric is summarized below:

1. Identifies, summarizes (and appropriately reformulates) the problem/question/work assignment
2. Identifies and considers the influence of context and assumptions.
3. Develops, and communicates OWN perspective, hypothesis or position.
4. Presents, assesses, and analyzes appropriate supporting data/evidence.
5. Integrates issue using OTHER (disciplinary) perspectives and positions.
6. Identifies and assesses conclusions, implications, and consequences.
7. Communicates effectively.

Reference:

- [1] O'Brien, L., Bass, L., and Merson, P., "Quality Attributes and Service-Oriented Architectures", CMU/SEI Technical Report, CMU/SEI-2005-TN-014, September 2005.
- [2] Offutt, J., "Quality attributes of Web software applications," *Software, IEEE*, vol.19, no.2, pp.25-32, Mar/Apr 2002.
- [3] Fremantle, P., Weerawarana, S., and Khalaf, R., "Enterprise Services", *Communications of the ACM*, Vol 45., No. 10, pp. 77-82.
- [4] Brown, A.W., Wallnau, K.C., "A framework for evaluating software technology", *Software, IEEE*, Vol.13, Iss.5, Sep 1996, pp. 39-49.
- [5] Guide to Rating Critical and Integrative Thinking, Washington State University, Fall 2006, [Online] available at <http://wsuctproject.wsu.edu/ctr.htm>

Turn in:

This assignment is due March 29th via Blackboard.