Content Exploration for e-Learning Using XML Web Services

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Abstract

Obtaining high quality content in an e-learning portal is critical to maximise the learning experience. For e-learning portals the content specialists are the publishers. Typically, publishers are nominated by portal administrators to make their content available to instructors. Instructors subsequently customise the portal by selecting content according to their requirements. The choice of content is limited to that provided by the publishers. This is a rigid system owing to the fact that instructors do not have access to an exhaustive range of content. We propose a system based on XML Web Services which can be adopted by publishers in adherence with a number of emerging web standards including SOAP and UDDI to disseminate their content. This system can be leveraged by portals to preview and subsequently acquire content which best suits the requirements as determined by instructors.

1. Overview

We propose a prototype system based on XML Web Services.

![Proposed System Diagram]

The architecture comprises of the following subsystems.

i. Publishers: These are the content specialists. The system aims at widely disseminating the meta-data for their content. XML registries are the yellow pages of Web Services. A specification for XML registries is Universal Discovery Description and Integration (UDDI) [1], which is being developed by a vendor consortium. Another specification for XML registries is the ebXML Registry and Repository standard [2]. The WSDL document is used for publication and discovery of businesses. JAXR [3] is the Java package for interacting with XML registries including UDDI and ebXML.

Content Discovery System (CDS): This subsystem retrieves and indexes the content meta-data which is provided by the publishers. The client discovers the publishers from the XML Registry Providers based on the WSDL document. WSDL document describes the interface to the Web Service in enough detail for the CDS to write an application to use the service. Based on the WSDL document of the publishers, the client generates remote procedure calls [3][4], which contains information about the remote method to be invoked by the Web Service. CDS will obtain the content meta-data as a SOAP response [5], which is an XML document. The XML document is parsed using a XML parser and the data is committed or modified to the database.

Content Preview System (CPS): This application will allow access to data in the CDS repository. Content Preview System (CPS) is used by e-learning portals to access the CDS repository. CPS is proposed to be a web-based application to access the CDS repository. CPS can be used by instructors to preview the content available from different publishers.

2. References


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