E-Learning Portal

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Abstract
The paper proposes the establishment of a web based e learning portal and defines components that make up an e-learning system and the objects that must be moved among these components. We implement the service model with Web Services technology to provide a standard means of communication among different systems and tools for learning. This paper focuses on how to integrate Web Services on the e-learning application domain. We use J2EE as our technical infrastructure to build our components and integrate them with web services.
Keywords: Application, e-Learning, J2EE, Service Model, Web Service

1. Introduction

In today's complex world, students' futures are determined by their ability to master the basics of subjects. Yet costs, class sizes and other issues often prevent student's access to quality online learning that can support and reinforce these essential skills. Traditional classroom based approach to learning is limited by these constraints. E-learning has been a topic of increasing interest in recent years. It is often perceived as a group effort, where content authors, instructional designers, multimedia technicians, teachers, trainers, database administrators, and people from various other areas of expertise come together in order to serve a community of learners. Although e-Learning has grown organically without a clear picture of the components of a typical e-learning system or how they interrelate, the need for establishing architecture is critical for defining competitive arenas and standards of development. This paper proposes to establish such an integrated architecture for e-Learning.

2. Defining e-Learning

The term e-Learning can be described by the following two definitions.
2.1 Based on Connectivity
e-Learning is the learning technology that takes advantage of connectivity...learning delivered or received mainly through the internet, intranets, extranets or the web [1].
2.2 Based on Functionality
•   E-Learning is networked, capable of instant updating, storage/retrieval, distribution and sharing of instruction and information.
•   It is delivered to the end-user via computer- using standard internet technology.
•   It focuses on the broadest view of learning-learning solutions that go beyond the traditional paradigm of learning [2].
  A second definition of e-Learning describes a model which shifts away from the standard 'situated' learning [3]. Such a form of learning is not limited by location and bringing together of all resources to that location. Instead, it allows access to the resources from any location by combining standard learning with web services.
The paper proposes to create a model that will encompass all these definitions.

3. Uploading and Downloading

The paper proposes the creation of a module which facilitates upload and downloads to the portal. The content which is global can be accessed by all whereas the content within a group can be downloaded upon login only by the group members. We observe that the factor that makes such a good portal a very effective one is the implementation of an optimal search engine. The paper proposes implementation of the same.

4. User Interaction

The paper proposes the implementation of user interaction by means of text based chat service. The users can join a chat room to engage in fruitful conversation on latest topics on education.

5. Video Lectures

The paper proposes that there be a video based lecture service using which students can attend live lectures conducted by notable faculty and these can be stored online for later retrieval.

6. Administration

In the paper we propose that the portal should allow ease of administration with the moderator having the ability to create groups and modify group members. We observe that in any such portal that facilitates sharing of resources, there is need for moderation of content that makes it way from the user. This will be effectively implemented.

7. Technologies

The paper proposes the use of latest technologies based on Java Web to provide a clean and state of the art user interface by using AJAX, JavaBeans and other new web technologies. The database will be securely maintained on Oracle with support for storage of different types of multimedia files.

8. Scope

  We find there is scope for improvement in many areas, as is the case with all technologies. An integrated forum will help users resolve each other's' queries and will be permanently maintained for future access. There is always scope for implementation of better search algorithms for faster and effective search and effort in this direction is being taken into consideration while proposing the paper.

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