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Document Management System for UndergraduateStudents

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ABSTRACT—

A document management system can provide web-based access to documents from anywhere, makinginformation retrieval instantly responsive, reducing the time and cost of processing and distributing data for students. Aconsiderable amount of research has been done to achieve an effective repository management system. However, mostof them fail to meet expectations because they cannot accurately enforce automatic access control to maintainaccess control mechanisms. The commercial tools for such an effective document management and its related contractual licensing are costly enough to be sustained by most of the organizations of developing countries. Therefore, cost-effective implementation models and tools are desired.

Keywords - instant retrieval, automatic access, cost-effective

INTRODUCTION

Digital data is easier to edit because it doesn't require a closet to be organized and consumes no ink or paper to create, which makes it easier to edit. Digital copies of documents offer the opportunity to streamline many tasks. Accessibility: Comparing accessing a digital file to searching a closet for a paper document is like comparing a walk in the park to climbing a mountain. Space Utilization: There was a time when full vault or off-site document storage was essential for the secure storage of paper documents. Flexibility: This term is often associated with electronic documents, which is why it is the preferred option for modern processes.

PCs are so ubiquitous that people spend most of their time using them. The use of electronic documents is increasing. Traditionally, documents have been produced and distributed on paper. People today create electronic documents, such as word processing files and presentation files, and share them over computer networks. Electronic technology enables rapid document creation and delivery. As a result, electronic documents replace paper documents [1]. Many universities or colleges have already launched archive digitalization to improve efficiency and standard of archives management. Some archives management systems have been used commercially to help initialize the management of text archives. However, there are some common problems with managing unstructured archives, such as incomplete file information, inefficiency of access to data, and inability to fully express the association between documents and files. Thus, many universities still use traditional management processes and methods which are suitable for physical records to handle image and video archives. This obviously has an adverse effect on the heavily invested archives digitization construction [2]. It is difficult for Universities to shift from paper-based systems to electronic systems due to the difficulty in uploading the existing paper-based documents into electronic forms. This system intends to integrate PDF document standards into the system to achieve the same. Universities which hold most of their essential documents in paper form bear the risk of unauthorized access to those documents. The paper suggests an electronic system with an authentication feature to get over this risk. Whenever, a website provides the service of electronic document management, it provides an upload and a download service. But when the number of users uploading and downloading increases, it puts a lot of pressure on the website server and the bandwidth.[3].

LMS (Learning Management System) covers registration, administering, monitoring of users and content. Blackboard and Moodle are widely accepted solutions. Although the integration with external e-learning repositories is not standardized, LMS permits exporting learning content to another system. In contrast, e-learning repository solutions are improving and now provide federated advanced searches of learning items across a network of repositories. The term "learning object" (LO) refers to any digital item that can be utilized to facilitate teaching or learning, and is not meant to be limiting [4].

An organization's long-term vision should focus on building intelligence, intellectual property (IP), and its knowledge base. Organizational knowledge sharing and creation is based on documents that require a structured approach to archiving, storing, retrieving, and managing. Document repository management is an important part of project management in any organization which requires sustainable long-term investment. Commercial tools for such effective repository management and the associated contractual licenses are costly enough for most organizations to maintain for developing countries. Therefore, low-cost implementation models and tools are desirable. Open- source development tools, on the other hand, are not a complete solution, but they are a cheap option for delivering creative content [5].

RELATED WORKS

We dived deeper into the subject by studying related papers. Implementation of Electronic Document Management in Russian Education. Quality Assessment [8]:

This paper is about transforming Russian higher education from a paper-based education system to an electronic based system. It aims to strive towards the Bologna process. The Bologna process aims to bring a better higher education system by creating a much more transparent, open, and mutually recognized system. In order to achieve the same, it is necessary to make the entire process electronic and thereby remove any discrepancies in the Russian Higher education system. The issue faced in this is the large scale at which it was to be implemented. Every University and its branches were supposed to comply. But the cost of implementing a reliable, licensed system was very high.

Intelligent Document Technology in University EducationalAdministration Management System [7]:

It is difficult for Universities to shift from paper-based systems to electronic systems due to the difficulty in uploading the existing paper-based documents into electronic forms. This system intends to integrate PDF document standards into the system to achieve the same. The paper presented analytical data to prove the increase in efficiency of educational institutions and proposed to implement the same in Chinese Universities.

An Intranet-Based Document Management and MonitoringSystem Framework: A Case for the National UniversityQuality Management Office [6]:

Universities which hold most of their essential documents in paper form bear the risk of unauthorized access to those documents. The paper suggests an electronic system with authentication features to get over this risk. However, they faced problems in converting all the existing paper-based documents into an electronic form.

WFMS: Web File Management as A Service [3]:

Whenever, a website provides the service of electronic document management, it provides an upload and a download service. But when the number of users uploading and downloading increases, it puts a lot of pressure on the website server and the bandwidth. The paper presents a new method to decrease the bandwidth pressure on the web server. The paper presents using a logical hierarchical organization to increase efficiency. However, even if we increase the number of layers in the hierarchy, it decreases the download speed of the documents. A set of specifications known as the Service Component Architecture (SCA) describes a framework for creating systems and applications utilizing a service-oriented architecture. SCA builds on open standards like Web services and complements and extends earlier methods of creating services. And Corporate Service Bus is a distributed, open standards-based communications middleware that uses XML, Web services interfaces, and defined rules-based document routing to secure the interoperability of enterprise applications.

Analysis of e-Learning Repository Systems and Frameworkswith Prepositions for Improvements [4]:

Learning management systems are programmes that control numerous courses and students (LMS). The issue of how to make it simple for LMS users to change and incorporate information from federated e-learning repositories into their courses still has to be solved. By analyzing current repository frameworks and projects, FEDORA (Flexible Extensible Digital Repository Object Architecture) framework is used as a repository solution. Some of the well-known LO repositories include MERLOT, LORNET, EDNA, and ARIADNE LOR. For the purpose of describing the content kept in the repository, several of them employ various metadata. As a result, an Application Program Interface (API) was created with a special focus on difficulties relating to a single metadata schema and a common query language for querying through Simple Query Interface search (SQI) GLOBE.

Electronic-Document-Based Management Process Model for Image Archives in Universities [2]:

There are two types – physical photos archives with existing records and digital photos archives in electronic document format. We should take eight activities into account involved in managing electronic images: creation, collection, verification, processing, archiving, using, system management, and long-term availability. The Open Archives Information System (OAIS) is the international standard for managing archival information. The OAIS reference model includes six modules that describe the change process of archives information as it goes through the process of ingesting, storage, management, and access. Any systems or projects that are committed to long-term preservation of digital information can use the OAIS as a starting point for the actual system.

OBJECTIVES

The concept was inspired by an issue that the educational institution has been dealing with recently. Our objective is to build a repository management system for our college to keep an online library of all the notes of every branch and subject to make sharing of knowledge faster and more convenient.

- To collect the previous research papers and collect the data from it.
- To implement a document management system which assists the users in managing their respective documents.
- To find the best approach based on evaluations of different papers for building our management system.
- Eradicate the process of storing the documents like notes and question paper physically.
- Providing consistent access to the users whenever needed.

PROPOSED METHODOLOGY

Database Server

The Database Server allows users to access documents present in the server. The DMS administrator is responsible for uploading collections of documents and once the process of uploading is finished, it becomes available to the users through a web browser. The supported document formats are PDF, DOCX, ppt, JPEG… etc.

Security Implementation

Security Manager (SM). The Security Manager is the logical layer of the system, designed to manage the security of both the DMS and all ISs in one central location. Responsible for managing user sessions and providing DMS and IS authentication/authorization services. Enterprise Java Beans (EJB) session beans are implemented for session management and Java authentication and authorization services (JAAS) for user authentication/authorization. SM has a simple user management interface that allows administrators to define security policies based on user role. Shows the logical flow of SM in the Information Server. When a user invokes the interface through a browser, SM automatically creates a session for that user and assigns the user the necessary credentials.

Chatbot

An AI-powered virtual assistant can be used to enhance the overall experience of a student by making it interactive and user-friendly. With a great UI/UX design, students are able to search for a particular subject related document by leaving a query. AI chatbot is built in such a way where it is able to resolve rapidly or instantly to the respective query. The search feature can be implemented with the help of regular expressions.

Chat box

The chat box is a place where all the students can interact with each other and faculties to clear their queries. The chat box provides a choice to send the message to all, or in particular to the faculties.

CONCLUSION

In this paper, we aim to develop and execute a DMS system forUniversity undergraduate students. DMS will enhance student knowledge exchange while reducing costs and enabling quickerinformation retrieval. This paper has examined some current issues with document management and organization amongstudents as well as issues with information sharing amongstudents. Knowledge sharing in the academic setting improves students' capacity, innovation, and productivity. We areprepared to build a successful document management system.

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