DOCUMENT MANAGEMENT SYSTEM

Mr. Dinesh Kumar R

Andrews A

Arun RS

Department of Information Technology

St. Joseph's College of Engineering,
Chennai, India.

ABSTRACT:

The document presents the design and implementation of a comprehensive Full Stack Document Management System (DMS) utilizing HTML, CSS, JavaScript, PHP, and MySQL technologies. The system aims to provide organizations with a robust and user-friendly platform for efficient document creation, storage, retrieval, and collaboration. The system's front end is developed using HTML for structure, CSS for styling, and JavaScript for dynamic and responsive user interfaces. The user interface is designed to emphasize simplicity and intuitiveness, ensuring a seamless experience for novice and advanced users. The back-end is powered by PHP, facilitating server-side scripting and enabling seamless communication between the user interface and the database. PHP handles user authentication, document storage, retrieval, and management functionalities. The system employs secure coding practices to ensure the confidentiality and integrity of the stored documents. The data management component of the system relies on MySQL, a robust relational database management system. The database schema is designed to efficiently store and organize documents, user profiles, access permissions, and other relevant information. Proper indexing and normalization techniques are implemented to optimize data retrieval and enhance system performance.

I. INTRODUCTION:

The electronic document management system is a step in the direction of realizing the concept of a paperless office [1]. The electronic document management system is software that facilitates the process of file management within an organization. This is done by converting documents and other papers into digital or electronic form. This Document management enables fast retrieval and makes file movement secure. It can also save time and money, and create more efficient processes. "The Document management system not only accelerates file processing but also ensures the effectiveness of capturing information and eliminating the need for manual document processing. Parallel to accelerating the process it securely searches and retrieves documents. In the day-to-day activities, the university produces various kinds of records from its different offices. Currently, all of the records are handled manually. Documents as manual processing and storing can result in a variety of problems and reduce performance. Hence, the need for a system that can store and manage such documents electronically is very essential. This document management system will be a web-based application system that generally manages digital documents; storage, retrieval, and reducing huge amounts of paper. The system users are also able to create, share, archive, and efficiently search files, thus allowing knowledge to be efficiently shared within the dashboard.

The main objectives of this project are:

• To understand the existing or current manual system and identify gaps.

• Study and analyze the user's functional and non-functional requirements.

• Propose a new automated document management system.

• Design a new document management system and identify possible design patterns.

• implement the proposed system

• Test and validate the new electronic document management System.

II. RELATED WORKS:

Microsoft SharePoint is a widely used web-based platform integrated with Microsoft Office, offering document management, version control, and workflow automation features suitable for collaboration within organizations. Google Workspace (formerly G Suite) provides cloud-based document management through Google Drive, offering collaboration tools, versioning, and storage capabilities for users and teams to work on documents in real time. Alfresco is an open-source platform offering document management and collaboration features such as version control, workflow management, and records management, catering to organizations seeking flexible and customizable solutions. DocuWare offers document management solutions with features like document capture, indexing, workflow automation, and integration with various business applications, suitable for organizations requiring efficient document handling. OpenText Documentum is an enterprise content management platform providing document management, collaboration, and compliance capabilities, ideal for large organizations needing robust content management solutions. M-Files is a metadata-driven document management

system offering features like version control, workflow automation, and real-time collaboration, focusing on organizing content based on its context rather than location. Adobe Document Cloud offers tools for creating, editing, and managing PDF documents with features like electronic signatures, document tracking, and real-time collaboration, suitable for businesses needing advanced PDF management capabilities. Zoho Docs is a cloud-based document management and collaboration platform providing features such as document editing, sharing, version control, and real-time collaboration, catering to small and medium-sized businesses. Dropbox Business offers cloud-based file storage and collaboration with features like file synchronization, sharing, and version history, suitable for businesses needing simple and user-friendly document management solutions. IBM FileNet is an enterprise content management system offering document management, workflow automation, and records management capabilities, designed for large organizations requiring scalable and customizable content management solutions.

III. METHODOLOGY:

To develop the proposed Document Management System, it is essential to use a set of methods and techniques. This section describes the methods and techniques chosen to achieve the objectives of the proposed system. For data collection and requirements, gathering mainly semi-structured interviewing and observation is chosen.

For a document management system project created with HTML5, CSS3, JavaScript, MySQL, and PHP, Agile methodology is used to tailor the software development. Here's a suggested methodology adapted for your project:

3.1. Project Initiation:

- Define project scope, objectives, and requirements, including the specified functions.
- Identify stakeholders and establish communication channels.
- Set up project documentation and version control system.

3.2. Planning:

- Break down the project into tasks and create a work breakdown structure (WBS).
- Estimate time, resources, and budget for each task.
- Create a project schedule with milestones and deadlines.

- Define roles and responsibilities within the development team.

3.3. Design:

- Design the user interface (UI) and user experience (UX) for the document management system using HTML5, CSS3, and JavaScript.
- Design the database schema using MySQL to store user information, documents, and logs.
- Define the architecture and data flow of the system, including authentication and authorization mechanisms.

3.4. Development:

- Implement the front end of the document management system using HTML5, CSS3, and JavaScript, focusing on responsive design and user-friendly interactions.
- Develop server-side functionalities using PHP to handle user authentication, document management functions, and logging.
- Implement backend database operations using MySQL to store and retrieve data.

3.5. Testing:

- Perform unit testing to ensure individual components work as expected.
- Conduct integration testing to verify interactions between frontend and backend components.
- Carry out user acceptance testing (UAT) with stakeholders to validate the system against requirements.

3.6. Deployment:

- Deploy the document management system to a staging environment for final testing.
- Address any issues or bugs identified during testing.
- Deploy the system to production once it meets quality standards and user acceptance criteria.

3.7. Maintenance:

- Provide ongoing support and maintenance for the document management system, including bug fixes, updates, and enhancements.
- Monitor system performance and user feedback to identify areas for improvement.
- Regularly review and update documentation as needed.

Throughout the project, it's essential to maintain open communication among team members, adapt to changes, and prioritize continuous improvement based on feedback and lessons learned. Agile methodologies like Scrum or Kanban can help manage the project iteratively and incrementally, allowing for flexibility and responsiveness to evolving requirements.
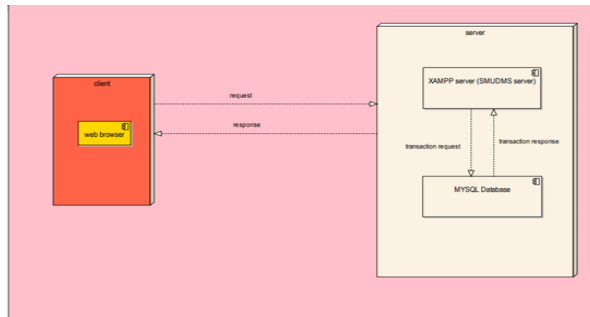
IV. ARCHITECTURE OF THE SYSTEM:

The new system is expected to replace the existing manual system with an automated system in all facets. It is mainly based on the system Analysis document and the architecture used for the system is a Three Tier Client/Server Architecture where a client can use Internet browsers to access the report provided by the system. Three-tier web Architecture is a unique system of developing web database applications that work around the three-tier model, comprising of database tier at the bottom, the application tier in the middle, and the client tier at the top. This comprehensive three-tier architecture module is the framework for most Web Applications on the Internet. This system helps to separate the Business Logic from the Application, Data Storage, and database. Three-tier architectures consist of three components distributed in Three layers: client (requester of services) business logic (data handler) and server (provider of services).

- User System Interface (such as session, text input, dialog, and display management services).
- Processing Management (such as process development, process enactment, process monitoring, and process resource services).
- Database Management (such as data and file services).

The three-tier design allocates the user system interface exclusively to the client. It places the application logic on the second layer and places database management on the third layer. A few reasons for Three tier architecture are chosen:

- The system works on homogeneous environments with processing rules (business rules) that do not change very often.
- Separation of business logic from application logic minimizes the workload of the server and enhances the security of data.
- Flexible applications will have only one part that can be deployed.
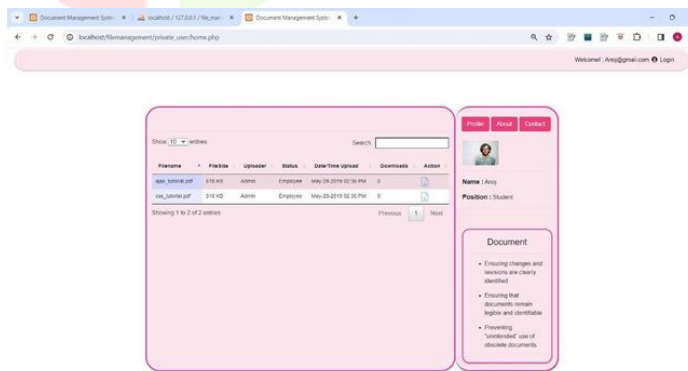

(Fig.1. Architecture Diagram)

V. RESULT:

A user interface screen design meets the system's user and process requirements.

(Fig.2. User Login page)

5.1 Description: An administrator is responsible for registering users of the system. The registration form should include a set of fields that encourage users to sign up for the new system.
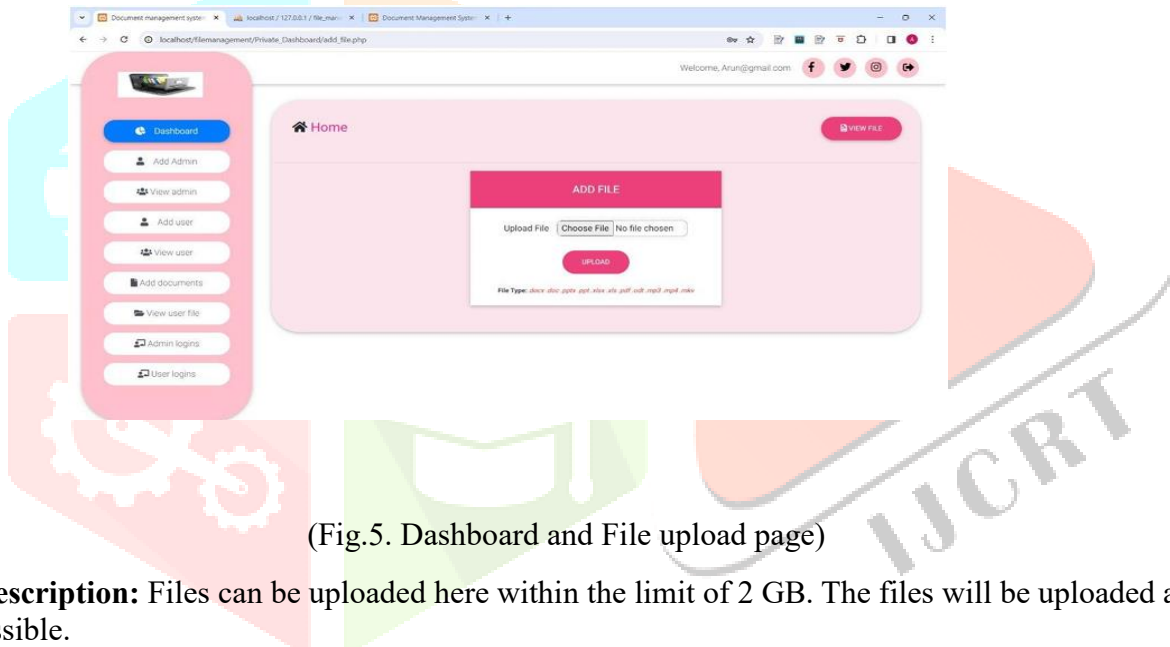

(Fig.3. Files in User page)

5.2 Description: All registered users can be viewed on a single screen.
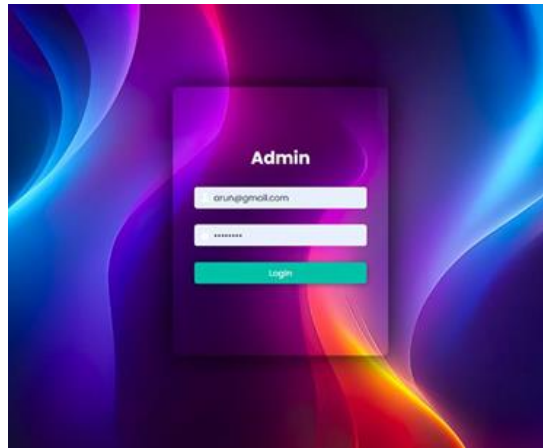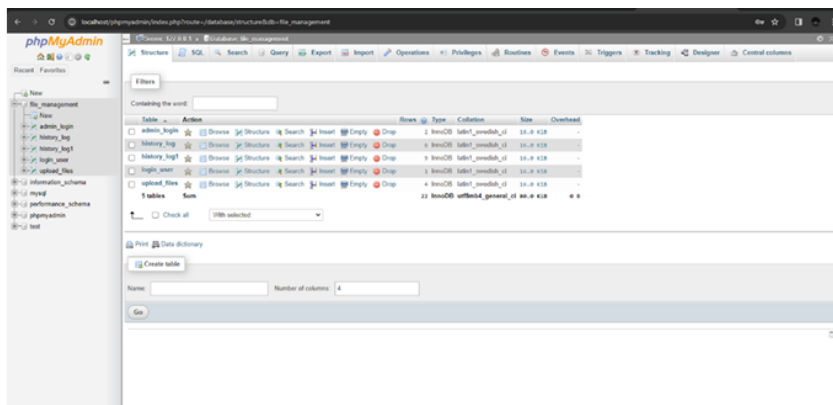

(Fig.4. Admin Login page)

5.3 Description: This is the page where only registered admins have access to log in.

(Fig.5. Dashboard and File upload page)

5.4 Description: Files can be uploaded here within the limit of 2 GB. The files will be uploaded as quickly as possible.

(Fig.6. Database)

5.5 Description: This logical data model contains all the needed logical and physical design choices and physical storage parameters needed to generate a design in a Data Definition Language, which can then be used to create a database.

VI. CONCLUSION:

This paper shows the initial step for developing a web-based document management system. It provides an electronic form of Crating, storing, retrieving, and controlling documents. Moving from a current manual work system to a Document Management system helps the SMU to reduce costs, automate processes increase document security, and minimize errors. The main information collection method was an interview; the nature of the interview was semi-structured with a basic guideline. During the interview, numerous discussions with different employees were made and challenges of the manual recording process were identified. To design and format the web system different kinds of tools are used like Hypertext Preprocessor, Hypertext Markup Language, Cascading Style Sheet, Bootstrap, and some other tools. The database was created using MySQL database management system. Generally, the developed Electronic Document Management system will benefit the Employee. It reduces the time spent looking for documents and ensures that the system users will find important information timely. This will enhance and improve their productivity.

VII. ACKNOWLEDGEMENT:

Based on the developed DMS the following recommendations are made for future works.

- Mobile-based document management system integrated with Mobile Cloud Computing.
- Mobile cloud computing is an infrastructure where both
- The data storage and data processing will happen outside of the mobile device.
- The recommended mobile document management system moves the computing and data storage away from mobile devices into powerful & centralized computing platforms located in the cloud. Then all the records are accessed over the wireless connection.
- Multi-lingual – The document capturing and the entire system support Multiple languages.
- The thesis and project portal system need to be integrated with DMS.
- Office 365 is one of the cloud services offered by Microsoft that includes access to most office applications. and additional services like Lync web conferencing, exchange online hosted email for business, Skype World minutes for home, and additional online storage including OneDrive.
- The recommendation of this system is to link it with this cloud service. Doing so will help the system to include and use plenty of services as one.
- Therefore, it can enable advanced document sharing and collaboration environments.

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