



## Automation of Document Management System: Smart City Project

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### ABSTRACT :

This project focuses on developing a document scanning and preservation system that uses advanced imaging and data management technologies. Key objectives include digitizing physical documents, creating standardized metadata for efficient cataloging, adhering to archival best practices, and providing user-friendly access to historical materials. The project also emphasizes sustainability through regular backups and format updates, ensuring long-term accessibility and preservation of cultural heritage in the digital age.

**Keywords:** cultural heritage, digitization, digital preservation, historical materials, sustainability.

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### 1.Introduction :

The vast majority of government procedures still require printing, signing, faxing, and sending physical documents, and many significant government documents are still only available in paper format. Land records, court records, permits, maps, vital data, blue prints, and other documents kept by the government must all be preserved for at least one lifetime. Certain documents have to be retained on file due to reasons such as sensitivity, historical relevance, legal restrictions, or adherence to retention standards.

But after years of usage, paper documents can become brittle and prone to deterioration. They are also vulnerable to natural deterioration over time and to damage or destruction from tragedies or natural disasters. The art of science of keeping papers in their original format is known as document preservation. By stabilizing the papers to prevent further deterioration, putting them properly in protective binders, and storing them in suitable conditions, document preservation techniques repair harm already done.

Historical documents and priceless records are protected via document preservation, which also makes information available to future generations while taking the necessary safety, security, and protective measures. We safeguard our data with protective covers and strong binders to reduce the possibility of damage from mishaps like fires, natural disasters like hurricanes or earthquakes, and other misfortunes. Maintaining and retrieving records is necessary in order to fulfill the legal obligations as stated in the retention guidelines established by the government or industry-specific. We advise keeping records in designated storage spaces. This reduces the need for costly real estate in desirable office locations and frees up space in government buildings. Government entities can also save money on labour by using third-party storage facilities. Our teams are specialized.

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### 2.Literature Survey

Archives are a crucial part of corporate information systems, though often underappreciated. Indonesia's Law No. 43 of 2009 recognizes the importance of archives as records created by institutions and individuals in society. It emphasizes the responsibility to maintain their integrity and security for future use. Technological advancements, particularly digitalization, have transformed archive management by converting paper records into digital formats for efficiency. The creation of archive units in Indonesia reflects the growing recognition of digital archives' value and the challenges of preserving them (Hakim, 2015; Sugiharto, 2010).

Digital archive preservation is a complex process, similar to other media preservation. The main goal is to ensure the longevity and durability of archives, making them accessible for users. Preservation is crucial because it directly impacts the availability of records. However, it faces challenges and is not always optimal. Traditional archives can be digitized, and with the rise of cloud computing, public, governmental, and private sectors now have more options for preserving digital archives.

Digital archives are accessible, modifiable electronic records (Read & Ginn, 2010), stored in collections like physical archives. Lazinger (2001) categorizes digital collections into two types: born-digital (created online) and those converted from printed archives. Pendit (2008) further divides digital archive collections into four groups: 1) full-text digital collections (e-journals, ebooks, theses), 2) websites aggregating born-digital content, 3) digital multimedia materials, and 4) metadata archives, including catalogs and indexes.

Preservation, as defined by Barthos (2003), involves guidelines for labour, finances, and storage to protect valuable library and archive materials, such as old manuscripts and historically significant books. Nufus (2017) views preservation as ensuring archives remain accessible when needed. Digital archive preservation focuses on practices to maintain digital collections for long-term use (Kenny & Rieger, 2000). However, digital archives are vulnerable to deterioration due to the constant evolution of technology, including hardware and software.

This project aims to raise awareness about digital archive preservation to protect valuable data and information. With the growing importance of archives, especially in Indonesia, laws have been enacted to safeguard them. As technology advances, digital archives face challenges in maintenance and vulnerability. Digital archives are categorized into websites, multimedia, metadata, and full text. Cloud computing offers new opportunities for preservation, which involves key tasks like labour standards, financial processes, and storage techniques. Further research is needed to support future efforts in this area.

### 3. Proposed Methodology

The application you are referring to is a Digital India program initiative that helps firms handle and process documents more effectively by providing digitalization services. Converting different media kinds including scanned document images into digital content that may be used is the aim. Through the digitization of these papers, the platform makes it easier to extract pertinent data and transform it into a format that can be used for research, analysis, and record keeping. This service supports the movement toward paperless workplaces by enhancing productivity and storage management and giving citizens on-demand access to digital public services.

The present model uses the Spiral model methodology. As per the spiral, model the same activities are repeated for the entire spiral until the whole software is built. There are six phases involved in the spiral model which are planning, requirements, risk analysis, implementation, testing, and execution as shown in Figure 1.

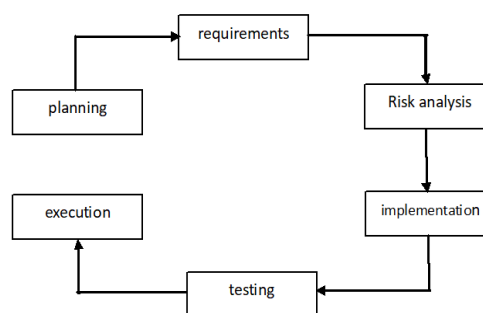


Figure 1: Spiral Model of the Proposed System

#### Algorithm

Step 1: Begin the process.

Step 2: Open the web pages.

Step 3: Login: Request user credentials. If valid, proceed. If invalid, retry or stop.

Step 4: Validate: Check provided information. If valid, continue. If invalid, retry or stop.

Step 5: Upload: Prompt the user to upload a details.

Step 6: Upload file: uploads the files which are scanned in pdf format. Confirm successful upload.

Step 7: Search file: search the files depend upon the file number, name, survey number, and scheme number.

Step 8: Download Document: Allow the user to download the uploaded document.

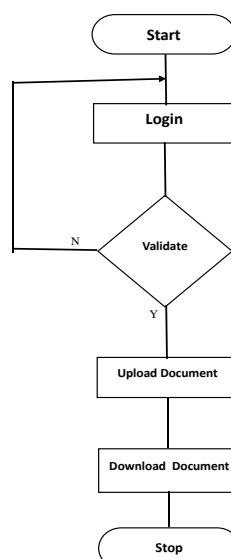
Step 9: Result: displays the document which is uploaded. Confirm successful download.

Step 10: End the process.

#### 3.1. Flow Diagram

This flow diagram (figure 2) outlines a simple document management system where users can log in, validate credentials, upload documents, and download documents. The diamond-shaped validation step is crucial to ensuring the process only proceeds for authorized users.

Figure 2: Flow diagram



### 4. Experimental Results and Discussion

The experimental findings indicate that implementing a Automation of Document Management System can significantly enhance efficiency, accuracy, and cost-effectiveness for organizations, particularly in industries handling large volumes of paperwork, such as government agencies and public services. The Automation of Document Management System was designed as a web-based platform. For its front-end interface, technologies like HTML, CSS, and JavaScript were utilized to ensure compatibility across different devices. Server-side functionality was developed using PHP, while MySQL was employed for the backend database. By hosting the system on a cloud-based server, scalability and availability were ensured.

In Figure 3, users are required to enter their username and password to log into the system. The system's dashboard, as shown in Figure 4a, offers an overview of user activities, including file uploads and downloads, organized by categories. The admin interface allows easy user management, document tracking, and log monitoring. The "Add User" page, illustrated in Figure 4b, enables administrators to create new user accounts by filling out details such as name, mobile number, department, username, and password. Once completed, the admin can save the new user, granting them access to the system. The User Logs section, depicted in Figure 4c, provides the admin with detailed information about user activities, including login times, file uploads, and downloads, which helps in tracking and monitoring user behaviour within the system.

Figure 5 presents a project user interface where users can input details like upload the file details, upload relevant files (e.g. pdf, drawing and images), and enter a username. A "Save" button is provided to finalize the entry.

In Figure 6, a search interface is shown with options to search by file details provided by various user interface, featuring respective search boxes and buttons. Additionally, it includes a navigation panel with links to the dashboard, upload section, and search functionality. Figure 7 illustrates the search results, displaying information related to specific users.

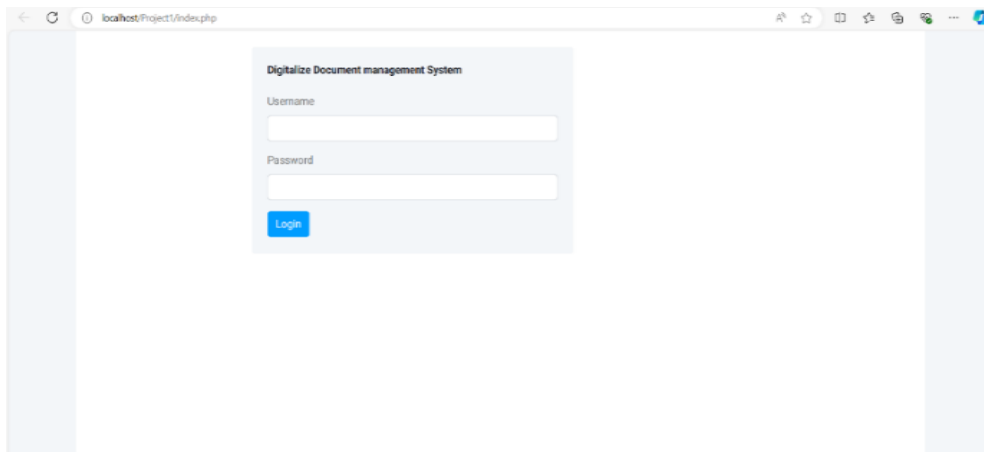


Figure 3: Login page

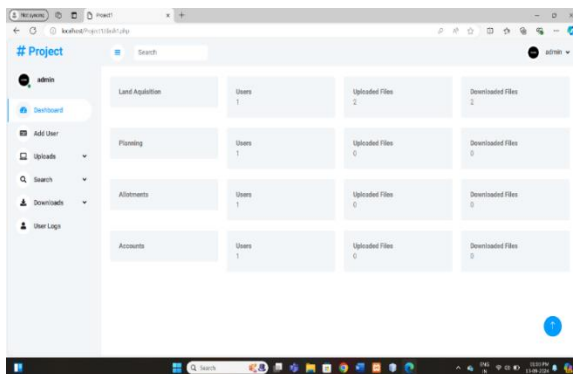


Figure 4 a. dash board

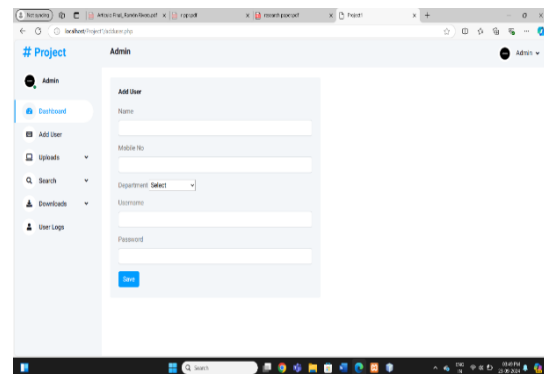


Figure 4 b.add user

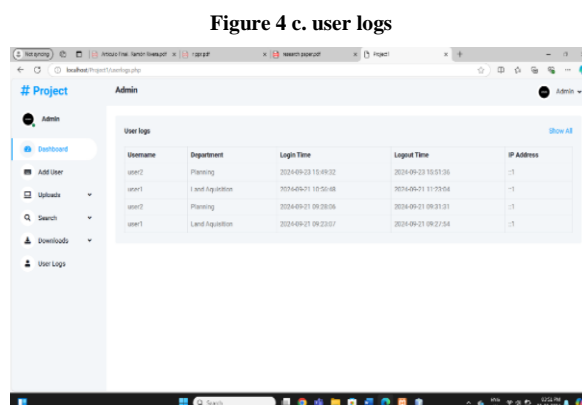


Figure 4 c. user logs

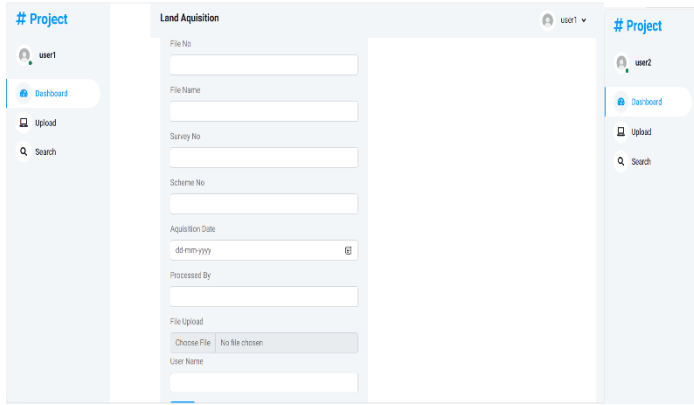


Figure 5 a. land acquisition uploads

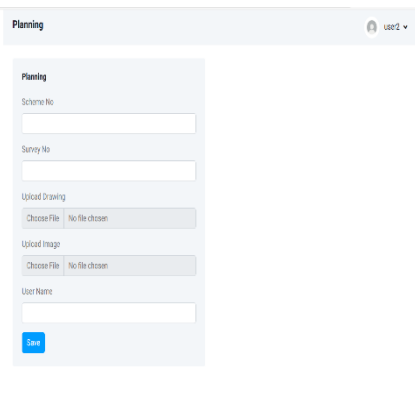


Figure 5 b. planning uploads

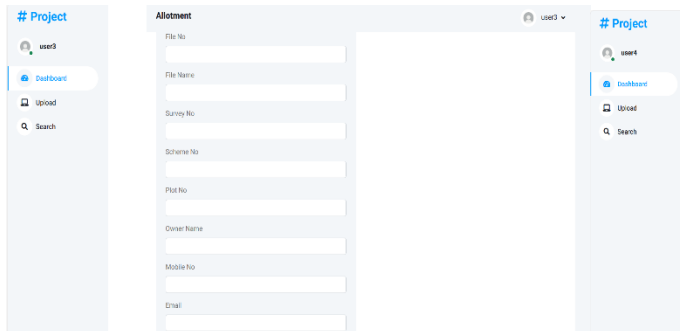


Figure 5 c. allotment uploads

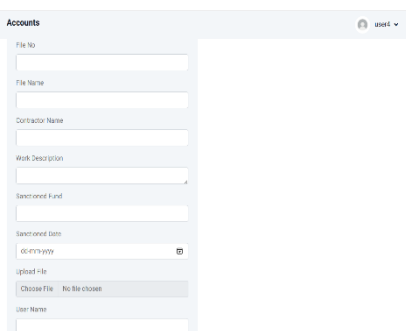


Figure 5 d. accounts uploads

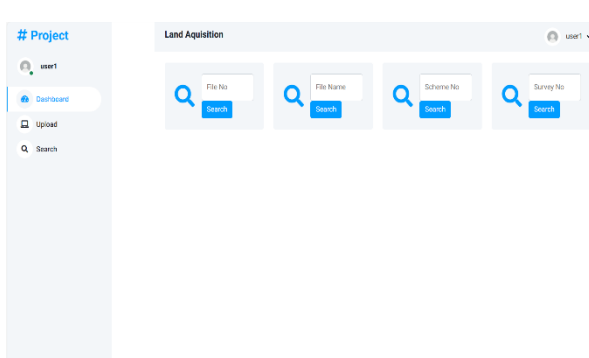


Figure 6 a. land acquisition search and download

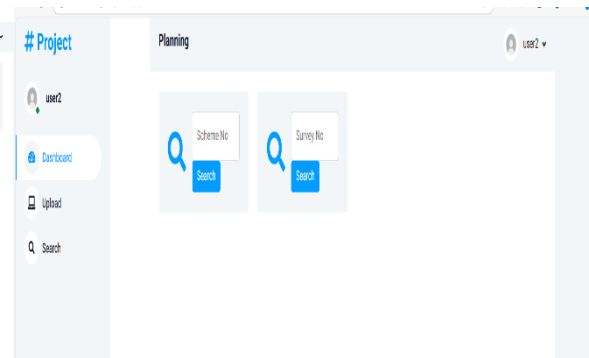


Figure 6 b. planning search and download

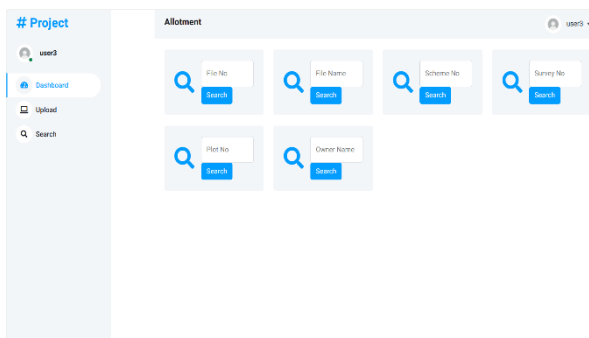


Figure 6 c. allotments search and download

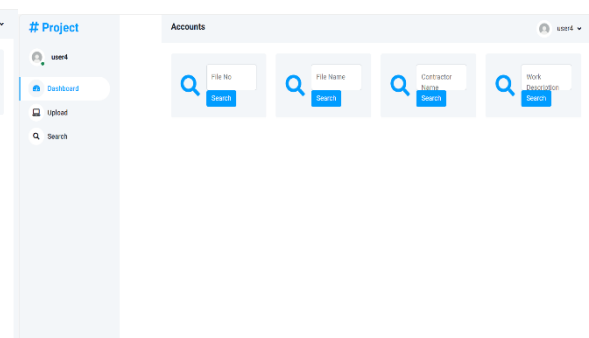


Figure 6 d. accounts search and download

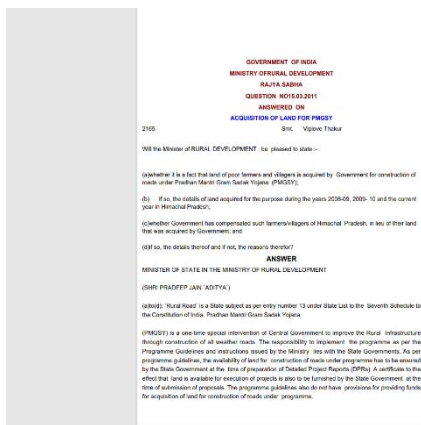


Figure 7 a. result of land acquisition

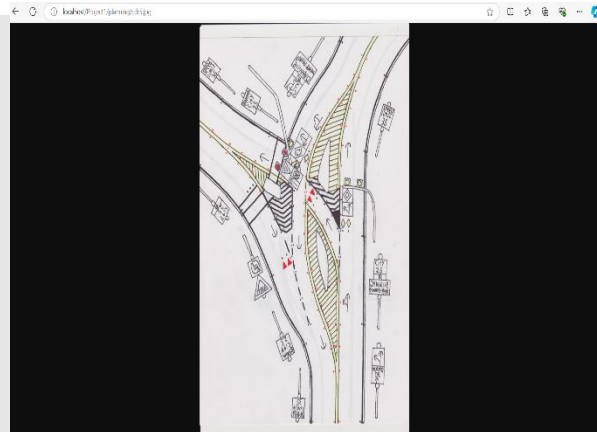


Figure 7 b. result of planning

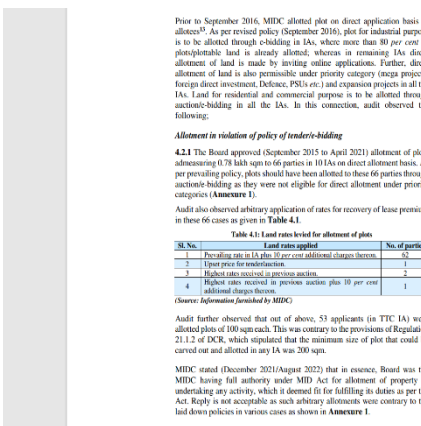


Figure 7 c. result of allotment

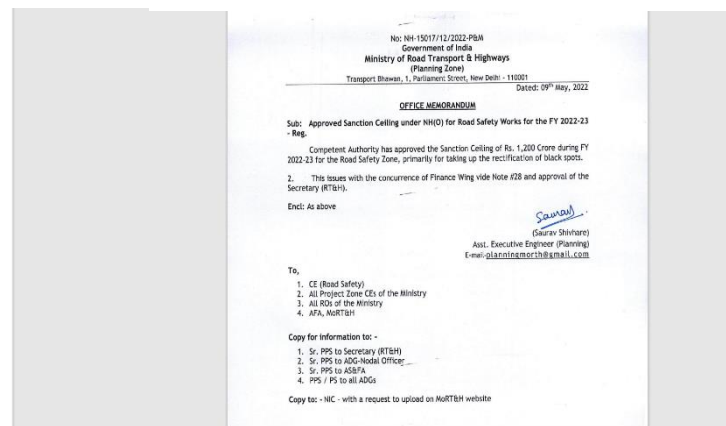


Figure 7 d. result of accounts

**Conclusion**

Effective maintenance of digital documentation is essential for ensuring information security, integrity, and accessibility. Organizations can enhance collaboration and streamline workflows by adopting best practices such as version control, hierarchical organization, and regular updates. Digital documentation also aids in compliance and audit readiness while facilitating knowledge sharing. Leveraging technology, like document management systems, boosts productivity and reduces data loss risks. Prioritizing robust documentation processes empowers teams, safeguards sensitive information, and supports long-term organizational performance. In summary, maintaining high-quality digital documentation is not just a task but a valuable investment in organizational resilience, efficiency, and clarity. Upcoming tasks include enhancing security, automating procedures, and connecting with teamwork platforms. Efficiency will be increased by AI-powered search and real-time teamwork. While training and compliance uphold standards, scalable storage and version control guarantee expansion.

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