Web Based Documentation Management System for CDIP Office Purpose

United International University

Mahjabin Rahman - 011 151 129
Imam Reza - 011 153 001
Sumaiya Hossain- 011 153 019
Murtoza Ahmed- 011 153 043
MD. Nurun-Nabi Hossain- 011 151 109

Abstract

Documentation management system is a widely used application in the field of IT world. The significance of having a collection of documents is highly appreciable in reducing human efforts and enhancing work flow. The goal of this paper is to develop an application that could save all these documents provided by the employees without any hassle and easily can access from any device, thus saving time, money and reducing the risks. The project we are directed to develop is a Web based documentation management system which will make a paperless office. Basically, we will make the Recruitment process online based and try to reduce the cost and hassles of using thousands of papers. For now on, our progress is done with the User Interface design and the ERD diagrams. Besides, we are working in the front end design.

Contents

Chapter 1

Introduction

In this chapter, we present the problem statement , the literature review of the project along with the motivation and methodology of our working procedure. In the problem statement part, we are going to be discussing about the introductory information about the project and the importance of this system. Moreover, the problems will this system is going to solving, is clearly being discussed here.

1.1 Problem Statement

Documentation management system is basically widely used among the world to efficiently reduce the office work load and making a paperless corporate life. Digital document management system can help an organisation in so many ways.

Documentation is a set of documents supplied on paper or even online or may be on digital or analog media.Such as, user guides, white papers, on-line help, quick-reference guides. Documents are very 15 essential for professional and educational life. But the cost and efficiency documents have been balanced by the use of the digital documentation management system.A document management system (DMS) is a system which is computer based in the case of the management of digital documents, is basically used to track, manage and store documents and reduce paper.It mostly keeps record of various versions and modifications too.

Digital documentation system helps to save money as we don't have to use any paper so we don't have to spend money in it. Which helps us to grow our revenue.It also helps us to save time as we can find all kind of information together as we need.

Thus it helps us to increase efficiency, as it is easy to find any kind of information within seconds. It also help us to increase productivity as people find it easier for any kind of work. on the other hand,as the documentation is online based, so anyone can access through the document.As a result it increases the intercommunication among the departments and organizations.

1.2 Motivation

Documented works are highly/vastly used now a days in various fields of profession.In every sector we are bound to use those documentaries in order to manage the system.But this papers are space consuming and hassle to manage.So, we are mainly motivated to reduce this hassles of carrying documents and reducing cost of papers. Moreover, a proper documentation management system will save time and human effort,thus it will increase the revenue and the inter-company communication will be better. So basically we are interested to do this project in order to make a paperless office and do the official work at less cost and hassle.

1.3 Objective of the project

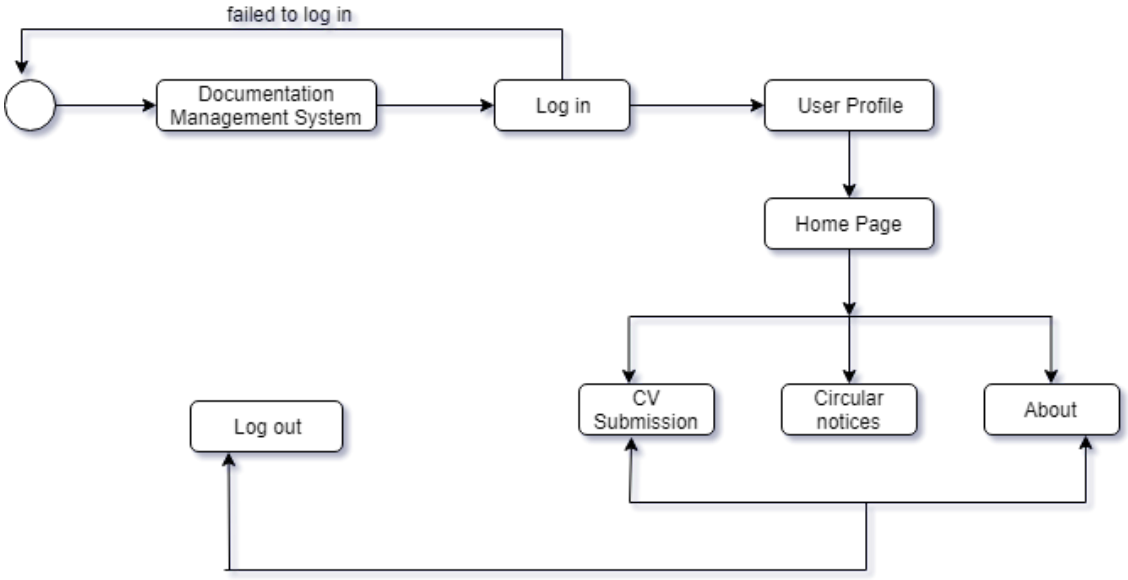
A proper documentation management system contains how to track,manage and store documents in a proper way and reduce paper. As the demand of the users,there are going to be various kinds of documents. The system is basically viewed as a component of enterprise content.

The main objective of our project is to make a paperless office for CDIP and this system is specifically designed for the office purpose documents. Since we already know the hassles occurring due to bunch of documents. The main aim of this project is about making the documents electronically saved in databases (controlled by the administration) and reduce human effort. Recruitment process for CDIP. Documented CV submission Online Circular updates notices available

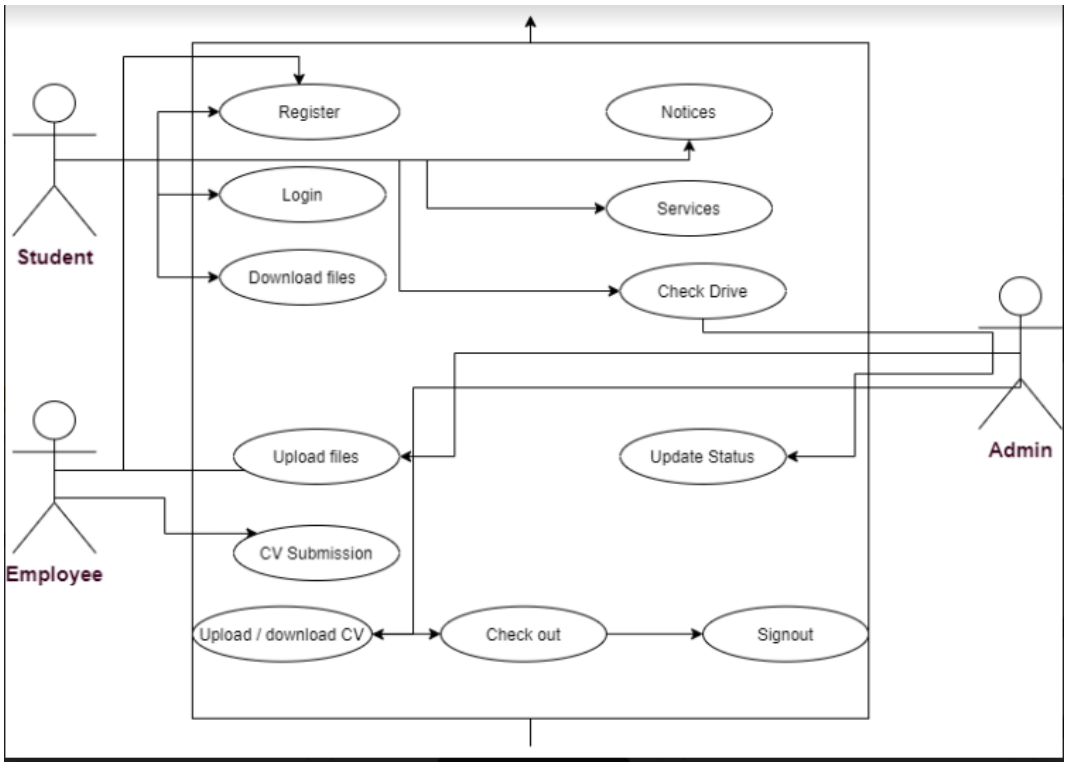
1.4 Methodology

The main goal in this research is to create a platform that could make a website that will covert some hard-copies into electronic soft-copies or we can say a paperless office . However to do so, rst we need to firstly decided which parts of the papers we will be working one. Our strategy is divided into two major phases: Learning phase and implementation phase.As long as we are done with our learning phase, the implementation part will be started. In the implementation phase, firstly we will make a proper front-end design ready. After that, we will start working on working on the back-end part and as the CDIP directions we will work afterwards.

1.4.1 Flowchart



1.4.2 Usecase Diagram



1.5 Ethics

ISO/ISE 12207:- International Organization for Standardization and International Electronically Commission combined published this standard for software engineers.

This standard promotes not to develop any software which may harm mankind, society and environment economically, physically or in any other form.

Chapter 2

Related work

15

In this chapter, we present the literature review of the project.

2.1 Preliminaries

Preliminaries include the background studies that is required highly to understand the basic and the research papers read by all the group members.

2.1.1 Background

What is Documentation?

Documentation is a bunch of documents which can be paper or online or digital or analog media. Examples of documentation can be, user guides, white papers, quick reference guides etc. Now-a-days, hard copies are very rarely used.

Types of Documentation:

Documentation is a very essential part of software engineering. Various types of documentations are specified such as: 1. Requirements It includes the foundation of the implementation. Basically the statements which will identify attributes, capabilities, characteristics, even qualities of a system.

2. Architecture/Design Overview of software. Includes relations to an environment and construction principles to be used in design of software components.

3. Technical All the Documentation of code and algorithms are included here. Moreover, interfaces, and APIs are in this category too.
4. End user Manuals for the end-user, system administrators and support staff.
5. Marketing It analyses the behavior of the product and how to market the products. Also the present demand of the product.

What is a documentation system?

A proper documentation management system contains how to track,manage and store documents in a proper way and reduce paper. As the demand of the users,there are going to be various kinds of documents. The system is basically viewed as a component of enterprise content.

2.2 Literature review

A summary of the literature review is given in the Table 2.1

2.2.1 Paper Summery

1. Extending Document Management Systems with User-specific Active Properties: This paper is a Property Infrastructure Document management system, which tells us about the benefits of having an paperless property preservation system. It's main approach is to represent the opportunities to make a property documentation system easily electronically in a computer based system, rather than heavy deeds and hard-copies. [1]

2. Document Management and Production System: : This paper is on a project aimed of An object-oriented document management and production system in which documents are represented as collections of logical components, or "object.Documents are represented as objects.Physically mapped onto a page by-page layout. Objects contain basic information bearing constituents such as text, image, voice or graphics.[2]

3. Electronic Document Management System and Method: This invention is related to the filed of electronic commerce software applications and an system and

method for managing and creating documents at ease. A System is provided to accommodate the automatic input of externally generated content in the project and a cover page containing user Selected data is provided which is attached to externally generated content . and through this cover page the documents will be tracked.the cover page will be having a generated bar code which reflects the document number and revision number. [3]

4. Method of Transparent Encryption and Decryption for an Electronic Document Management System : This is a very rare project on DMS so far. In this project they have used Cryptography method to preserve the documentations. In this project it traps files to I/O events and performs cryptography.It adds a software module. [4]

5. An Overview of Workflow Management: In today's world, for running a successful business we must have to deal with global competition, reduce the cost of doing business and rapidly develop new services and products. So the paper can be summarized with these key lines: 1) How to process a business model

2) Re-engineering of businesses process

3) Workflow automation system

In this paper there is a high level overview on current workflow management system. [5]

6. Document Information Management System: : This paper contains a project on developing a search-engine for a documentation management system to make the searching system faster. How a search-engine works at a document management system and A complete way of searching a word in a document management system. In this paper there is a high level overview on current workflow management system [6] .

7. Thesis FS: Online Document Management System: From process modeling to workflow automation infrastructure: The paper is about the impotence of having a document management system. the main problem is limitation of paper in a office or in a industry.so the solution has came of having a online document management system. The paper also gave a review of different OS based online document management system.like Yahoo! Briefcase, Apple iDisk, File Net Content Manager. so this is the paper review.

[7]

8. Worker and Document Management System: Documentation Management System consisting of a bunch of employee details and information of a specific company.It consumes the information in Databases and also including Information overview part. This paper helps us in our project through their database structure and the ERD diagrams. [8]

9. Data mountain: using spatial memory for document management: This paper consist of a new technique for document store data mountain. Converts documents to 2D spatial layouts.Users placing documents arbitrary.It also includes user study where every implementation is explained with details. [9]

10. Computerized Document Management System : This paper is on a project aimed of making a Computerized document management system.They have divided the document into segments. This paper consists a comment receiver section. [10]

11. Active annotation mechanism for document management systems : An active annotation mechanism detects annotations on a document which may be in the form of in-line annotations and out-of-band annotations, which may be inputted through a variety of input devices.[11]

12.Computer-based document management system : A computer-based electronic document and/or paper-based document management application program. The program provides an efficient way to automatically import, index, categorize, Store, Search, retrieve, manipulate and archive electronic documents.[12]

13.Electronic document delivery system in which notification of said electronic document is sent to a recipient thereof : In this paper, An electronic document delivery system and methods of its use are provided. A document. preferably in a portable format. is provided in a remote server.[13]

14. Electronic document verification system and method : The integrity or the signator of an electronic document can be verified by embedding a security object.The signator of the electronic documents are verified, the electronic chop is not displayed. In addition, a warning message may be displayed if verification fails.[14]

15.Web-based construction project management systems: how to make them successful? : the paper is about , how to make a web based project management system successful,and the steps . the paper also gave a review of some IT company how they make it successful. methods. its mainly a project overflow and review.[15]

16.Internet document management system and methods : The paper is about an internet based document system and methods . and also its background. methods/tools :DMS , HTML, Internet based.[]

17.Automated work-flow management and document generation system and method : this paper is all about a method for a workflow management system which is a database and it is controlled by network of multiple computers.it have also the rules about how to control the agent processing.[16]

18. System and method for performing flexible workflow process execution in a distributed workflow management system : this paper is all about a workflow management system created by a computer network using multiple computres. this tells us about the workflow process that is controlled by two or more computers.[17]

19.Computer-based documentation and instruction : This paper is basically tells us that how user instruction works on a computer system and how an instruction involves performing an interactive example and providing explanatory information to correspond to the example. this paper also let us know what explanatory information does. [18]

20. Computer-implemented methods and systems for generating software testing documentation and test results management system using same : This paper let us know that A computer-implemented method may include steps of generating a test template,generating at least one test scenario for each of a plurality of functional areas. each test scenario being configured for some purpose which are described in this paper. [19]

Paper List				
Name	Title	Author	Year	Key Contribution
Mahjabin Rahman	Extending Document Management Systems with user-specific active properties	Dourish, Paul and Edwards, W Keith and LaMarca, Anthony and Lamping, John and Petersen, Karin and Salisbury, Michael and Terry, Douglas B and Thornton, James	2000	The basic fundamental of documentation and its types along with the applications.
	Active Annotation Mechanism for Document Management Systems	Dourish, James P	2005	An active annotation mechanism detects annotations on a document which may be in the form of in-line annotations and out-of-band annotations, which may be inputted through a variety of input devices.
	Document management and production system	Smith, Robert M and Ting, David MT and Boer, Jan H and Mendelssohn, Marvin	1993	The basic fundamental of documentation and its types along with the applications.
	Computer-based document management system	Chen, Ying-Jye James and Ferguson, David R and Hong, An N and Suleman, Dani and Whittemore, Gregory L	1999	A computer-based electronic document and/or paper-based document management application program. The program provides an efficient way to automatically import, index, categorize, Store, Search, retrieve, manipulate and archive electronic documents.

Paper List				
Name	Title	Author	Year	Key Contribution
MD. Nurun Nabi Hossain	Electronic Document Management System and Method	King, Shawn and Desrochers, John and Stewart, Angus and McNeil, Douglas	2004	The procedure schematic diagram of EDMS and basic explanation
	Method of Transparent Encryption and Decryption for an Electronic Document Management System	Zizzi, Stephen	2001	fill it up
	Electronic document delivery system in which notification of said electronic document is sent to a recipient thereof	Smith, Jeffrey C and Bandini, Jean-Christophe	1998	In this paper, An electronic document delivery system and methods of its use are provided. A document. preferably in a portable formate is provided in a remote server.
	Electronic document verification system and method	Houser, Peter B and Adler, James M	1997	The integrity or the signatory of an Electronic Document can be verified by embedding a security object.The signatory of the electronic documents are verified, the electronic chop is not displayed. In addition, a warning message may be displayed if verification fails.

Paper List				
NamE	Title	Author	Year	Key Contribution
Imam Reza	Thesis FS: Online Document Management System	Noel, Joseph Christian G and Yu, William and Tagle, Pierre	2004	OS based documentation review and analysis (example: Yahoo Briefcase, Apple iDisk)
	Worker and Document Management System	Woodings, Lewis and Bosse, James and Hodgson, Mathew and Smorodintsev, Alexander and Klimantov, Alexei and Karassik, Viatcheslav	2004	documentation management system consisting of a bunch of employee details and information of a specific company.
	Web-based Construction Project Management Systems: How to make them successful?	Nitithamyong, Pollaphat and Skibniewski, Miros	2004	a web based project managment sysytem successfull,and the steps . the paper also gave a review of some IT company how they make it succesfull.
	Internet document management system and methods	Serbinis, M Michael and Leibu, Daniel and Chrapko, Evan V and Pappes, Valerian	2003	an Internet Based Document System and Methods .And also its background. methods/tools :DMS , HTML, Internet based.

Paper List				
Name	Title	Author	Year	Key Contribution
Sumaiya Hossain	An Overview of Workflow Management: From process modeling to workflow automation infrastructure	Georgakopoulos, Diimitrios and Hornick, Mark and Sheth, Amit	1995	Business process modeling
	Document Information Management System	Yano, Takashi and Tabata, Yasuhiro and Ishijima, Hisashi	2002	fill it up
	Automated Work-flow Management and Document generation system and method	Petito, Karen M and Petito, Carl P	2010	a Workflow Management System which is a database and it is controlled by network of multiple computers.it have also the rules about how to control the agent processing.
	System and method for performing flexible workflow process execution in a distributed workflow management system	Du, Weimin and Davis, James W and Pfeifer, Clemens and Shan, Ming-Chien and Sheard, Nicolas	2000	a Workflow Management System created by a computer network using multiple computres. this tells us about the workflow process that is controlled by two or more computers.

Name	Title	Author	Year	Key Contribution
Murtoza Ahmed	Data mountain: using spatial memory for document management	Robertson, George and Czerwinski, Mary and Larson, Kevin and Robbins, Daniel C and Thiel, David and Van Dantzich, Maarten	1998	: Basic of paperless office, data mountain interface design.
	Computerized document management system	Yehuda, Issac and Gimprich, Jeffery D and Chernov, Leonid and Anderson, Melissa E and Desai, Gautam B and Gusick, David L and Graham, William J	2001	Computerized document management system.
	Computer-based documentation and instruction	Hennum, Erik and Ott, Landon L	2001	A computer-implemented method may include steps of generating a test template,generating atleast one test scenario for each of a plurality of functional areas. each test scenario being configured for some purpose which are described in this paper.
	Computer-implemented methods and systems for generating software testing documentation and test results management system using same	Vikutan, Gene	2011	how user instruction works on a computer system and how an instruction involves performing an interactive example and providing explanatory information to correspond to the example. this paper also let us know what explanatory information does.

2.3 Benchmark analysis

Features → DMS_Name ↓	Professional Services	Data Storage	Software Based(Offline)	Online Based	File Upload	Easy Access	Recruitment process
Panda Doc	Yes	Yes	Yes	No	No	No	No
Zoho Forms	Yes	Yes	Yes	Yes	No	Yes	No
Pin point	Yes	No	Yes	No	No	No	No
PDF Element Pro	Yes	Yes	Yes	Yes	No	Yes	No
eFile Cabinet	Yes	No	No	Yes	No	Yes	No
Back Log	Yes	Yes	Yes	No	No	No	No
DMS_CDIP	Yes	Yes	No	Yes	Yes	Yes	Yes

2.4 Summary

In this chapter, we have discussed the background studies that is required highly to understand the basic and the research papers read by all the group members.

Chapter 3

Project Design

The following chapter focuses on design part.Considering system requirements specifications . Followed by methodology and figures related to the project.

3.1 Requirement Analysis

This part of the document shows the project plan for the development of integrating of Multiple services using Application Programming Interface. The plan will include , but it is not restricted to a summary of the system functionality. The document will show scheduling, delivery estimates, project risks and how those risks will be mitigated.

3.1.1 Overview

Integration of multiple services can be done in two ways, number one by following Simple Object Access Protocol(SOAP).Number two by following Representational State Transfer (REST).We aim to develop on application that will connect web based platform with the APIs by following REST API method.

3.1.2 Purpose

The purpose of the SRS document is to present a detailed description of constrain of Integration of Multiple Services using API. It will explain the purpose and features of our system used here and how the system will work. What type of APIs will be used here and how this system will be operated.This document is helpful for both stakeholders and developers of the system.

3.1.3 Scope

In our system integration of web based services will be cheap and less time consuming.Developer uses APIs yo integrate bigger systems. Conduct a trail run of API integration.Develop a functional web based application.

3.1.4 Goals

After the completion of this project we will fulfill some specific goals. Some of the goals are :

- Developing a functional web based application
- Reducing human effort.
- Make a paperless office.
- Make a more organized and easy documentation.

3.1.5 Overall Description

Here will be describe the overall process to provide as much as information about our project.

3.1.6 Users

There will be mainly two kinds of users of our application. Number one is customer and number two is admin.

3.1.7 Functionality

It is important how our application will function. Down below we have listed the functionality.

- User can upload different types of document.
- user can easily download the files they need.
- All the documents will organized.
- Easy searching option.

- Social media integration.
- Reporting and ratting tools.

3.1.8 Platform

Our project is web based management system. So it can be easily accessed by a web browser which has internet connection.

3.1.9 Development Responsibility

For developing the website we are responsible for the creation of interface, server setup, managing server tools, managing the content of the website and support.

3.1.10 Functional Requirements

Functional requirements describe the behaviour of the system. Our web page would be easy to use and user would find it comfortable. Products will be categorized. All the basic user functions would be shown at the homepage. Step by step description: Customers uses the application Use Case diagram given help us to visualize the full process.

- A user can register/log in.
- A user can upload and download all kind of document.
- A user can upload his/her CV online.
- Admin can post all kind of notice.
- Admin also can upload important files and video.

3.1.11 Requirements Specifications

Let us discuss the non-functional requirements of our product. System Properties: The system properties are listed below.

- Integration of multiple services.
- HTML/CSS,JAVA Script based UI design.
- Laravel framework based application.

3.1.12 Backend Programming Language

For backend development we have various language but we have chosen php. Laravel for the frame work.

3.1.13 Database Selection

In developing the website we will need a database. We use mysql.

3.1.14 Work Division

Since its a group project and web based system with huge work. So we have divided the work load among our group members in following way:

Mahjabin Rahman

1. Project proposal.
2. Study Materials.
3. Front end design.
4. Data collection.
5. Report writing.

Imam Reza Rafi

1. Project Proposal.
2. Study Material.
3. Report writing.
4. Data collection.

Murtoza Ahmed Mumit

1. Project Proposal.
2. Features Implementation.
3. preparing Database.

Sumaiya Hossain

1. Project proposal.
2. Preparing slides.
3. Gathering information.

Rownak Rasel

1. Project proposal.
2. Benchmark Analysis.
3. Preparing slides.

3.1.15 Methodology and Design

The main goal in this research is to create a platform that could make a website that will covert some hard-copies into electronic soft-copies or we can say a paperless office . However to do so, rst we need to firstly decided which parts of the papers we will be working one. Our strategy is divided into two major phases: Learning phase and implementation phase.As long as we are done with our learning phase, the implementation part will be started. In the implementation phase, firstly we will make a proper front-end design ready. After that, we will start working on working on the back-end part and as the CDIP directions we will work afterwards.

3.2 Summary

This chapter of the report expressed the design and features. Using different APIs the project is being integrated. For third party payment, it requires external server to handle the API requests. Having the access token, api secret key the developed application connected with the store.

Chapter 4

Impacts, Challenges Standards

In this chapter, we will be discussing about the impacts of this project in all the possible sectors and the difficulties we are facing through developing the system. Moreover, the standards will be discussing shortly.

4.1 Impacts

Here we discuss the impact that our project may cause.

4.1.1 Economic Impact

This project should be economically viable since it may just be a project of everyones fondness. So it may secure finance and also be a positive impact on society. moreover, we know that a documentation management system will help to increase the revenue and profit because less amount of papers will be used.

4.1.2 Environmental Impact

Since it is a web based project, it doesnt affect the environment. It doesnt add more consumption of energy a computer usually takes. So, it may not benefit the environment but also will not threat the environment either.

4.1.3 Safety Impact

The coding is safe and it is free from well known exploits. The safety measure we are following is using Unity. Which encodes our projects code.

4.1.4 Social Impact

The Documentation management system will have a great social impact since it will serve the society a huge comfort facility towards official work.

4.1.5 Manufacturability

This project can be made and since it is a software, it can be made in large numbers without any problems. And since we are using existing software to make this project, it doesnt rely on upcoming technological advances. It can also be a profitable project if it is loved by the users.

4.1.6 Sustainability

This management system is sustainable if we have a lot of users which results in being a long-running project and also be part of fast updates. And since this project cant be hacked, so it is also durable. This will go through a good amount of testing so that no accidental inputs can be taken.

4.2 Challenges

Every project or research should must have some challenges or obstacles. If there is nothing new to achieve or no new challenges for newer invention, the project would be monotonous. Since, the challenges we are going to face while doing this project are very specific too describe.
Firstly there is no consistency in file storage. And also while integrating Software and Applications. But the major challenge for us will be too create a CV template as we have decide to make it for CDIP recruitment process. Moreover, making the website feasible and Security of the data will be also a glimpse of obstacle though. For now, We are making the project with the existing technology we have at our disposal. But we may not get the desired output of quality since we need better software and technology to do it. So, the existing software could prove to be a big constraint for us.

Chapter 5

Conclusion

5.1 Summary

Bangladesh has more than thousands of employee hiring companies and there are bunch of hard documents are getting used. Documentation management system is such a project that will deploy a lot human efficiencies in professional sectors through making a paperless office. In this new era, such a management system is highly significant for profession and also on educational sectors.So, our research will tremendously help mass professional and educational units and hopefully it will go further in the future.

In this semester, we are targeting to start the implementation process as soon as possible. We hope it would be appreciated by people of all profession who are looking for job vacancies.We also hope it could be a profitable project that we can deploy in different companies and distribute to all the people.

5.2 Limitations

5.3 Future Work

The importance of a documentation management system is never ending. A good document management system can help organize all of your files and data in one place, keep track of all of your critical documents, speed up your workflow, improve accuracy and provide around the clock access to documents from any part of the world.So our future plan is to work ahead with that project further because this a ultimate progressive

project which will be a never ending project. Again, Further after CDIP we will try to enhance the project for further companies (with the proper authorised permissions)

Bibliography

[1] Paul Dourish, W Keith Edwards, Anthony LaMarca, John Lamping, Karin Petersen, Michael Salisbury, Douglas B Terry, and James Thornton. Extending document management systems with user-specific active properties. *ACM Transactions on Information Systems (TOIS)*, 18(2):140–170, 2000. 6

[2] Robert M Smith, David MT Ting, Jan H Boer, and Marvin Mendelssohn. Document management and production system, January 19 1993. US Patent 5,181,162. 6

[3] Shawn King, John Desrochers, Angus Stewart, and Douglas McNeil. Electronic document management system and method, April 22 2004. US Patent App. 10/407,557. 7

[4] Stephen Zizzi. Method of transparent encryption and decryption for an electronic document management system, February 6 2001. US Patent 6,185,681. 7

[5] Diimitrios Georgakopoulos, Mark Hornick, and Amit Sheth. An overview of workflow management: From process modeling to workflow automation infrastructure. *Distributed and parallel Databases*, 3(2):119–153, 1995. 7

[6] Takashi Yano, Yasuhiro Tabata, and Hisashi Ishijima. Document information management system, April 30 2002. US Patent 6,381,593. 7

[7] Joseph Christian G Noel, William Yu, and Pierre Tagle. Thesisfs: Online document management system. 7

[8] Lewis Woodings, James Bosse, Mathew Hodgson, Alexander Smorodintsev, Alexei Klimantov, and Viatcheslav Karassik. Worker and document management system, December 30 2004. US Patent App. 10/879,617. 8

[9] George Robertson, Mary Czerwinski, Kevin Larson, Daniel C Robbins, David Thiel, and Maarten Van Dantzich. Data mountain: using spatial memory for document management. In *Proceedings of the 11th annual ACM symposium on User interface software and technology*, pages 153–162. ACM, 1998. 8

[10] Issac Yehuda, Jeffery D Gimprich, Leonid Chernov, Melissa E Anderson, Gautam B Desai, David L Gusick, and William J Graham. Computerized document management system, July 24 2001. US Patent 6,266,683. 8

[11] James P Dourish. Active annotation mechanism for document management systems, September 27 2005. US Patent 6,950,982. 8

[12] Ying-Jye James Chen, David R Ferguson, An N Hong, Dani Suleman, and Gregory L Whittemore. Computer-based document management system, December 28 1999. US Patent 6,009,442. 8

[13] Jeffrey C Smith and Jean-Christophe Bandini. Electronic document delivery system in which notification of said electronic document is sent to a recipient thereof, August 4 1998. US Patent 5,790,790. 8

[14] Peter B Houser and James M Adler. Electronic document verification system and method, February 25 1997. US Patent 5,606,609. 8

[15] Pollaphat Nitithamyong and Mirosław J Skibniewski. Web-based construction project management systems: how to make them successful? *Automation in construction*, 13(4):491–506, 2004. 8

[16] Karen M Petito and Carl P Petito. Automated work-flow management and document generation system and method, April 27 2010. US Patent 7,707,153. 9

[17] Weimin Du, James W Davis, Clemens Pfeifer, Ming-Chien Shan, and Nicolas Sheard. System and method for performing flexible workflow process execution in a distributed workflow management system, March 21 2000. US Patent 6,041,306. 9

[18] Erik Hennum and Landon L Ott. Computer-based documentation and instruction, July 10 2001. US Patent 6,259,445. 9

[19] Gene Vikutan. Computer-implemented methods and systems for generating software testing documentation and test results management system using same, March 22 2011. US Patent 7,913,230. 9

Appendix A

Appendix Title

A.1 Section Title

Write section here.

A.1.1 Sub-section here

Write sub-section here.

Appendix B

Appendix Title

Add appendix here.