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Electronic Document Tracking System (EDTS) on Tertiary Institution

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Abstract

The aim of this work is to develop an Electronic Document Tracking System (EDTS) to improve productivity amongst Core administrative personnel, The EDTS that would be developed in this project would be a web application that is able to manage the creation, and movement of files from desk to desk of personnel who work on them. The system would be developed with HTML,CSS,JAVASCRIPT,PHP,MYSQL after establishing vital functional and non-functional requirements and detailed workflows Document, such as, reports, decisions, etc can be processed and tracked by the system in real-time. Furthermore, the system helps in tracking and provides location information. The system is interactive and usable and able to improve file management and productivity in University administrative operations which would eliminate the stressful nature of manually filing and tracking documents. I would employee the Unified Modeling Language (UML) and Participatory observation would be used as my data collection technique.

Key Words: Electronic, Document, Tracking System, Tertiary Institution, File Management

1.0 Introduction

The need to keep track of files has become significantly important today particularly in institutions of higher learning. However, In most cases, files are transferred physically from one desk to another within a department or between departments. File Tracking System offers clear visibility of the file movement throughout the file processing

channel Sometimes there is need for a file to go through several personnel before it can be rendered acceptable. There are however drawbacks in transferring these files from one desk to another such as getting these files missing or forgetting to document the transfer. There is thus need for a system that can provide solutions that will address such problems while saving time and energy of administrative workers. File tracking systems

offer a viable solution in this regard. Notable examples of such a system are described in the paragraphs that follow.

A file tracking and document tracking software was launched by in 2013. The software is a userfriendly barcode-based tracking system. Information and Data Exchange Advanced System (IDEAS) is a file tracking system developed using Free and Open Source Software (FOSS) by the National Informatics Centre (NIC) in Kerala, India. It is developed as a web application and its purpose is to keep track of files coming into a government office (that is, citizens' petitions). Due to its intuitive web interface, government officers are able to easily record or query information about the petitions or files received within their respective offices through the medium of the Internet. Also, users which include both citizens and officers alike can track the movement of files making the system a transparent one. The drawback of this particular system is that it is built to serve files in government offices and not necessarily Universities or other institutions of higher learning.

Another similar system is one developed by a division of NIC; India called the "Department of Personnel and Training". The system was developed as a web application for the government of New Delhi. It is used to create, send and track government files (receipts). Similar to IDEAS, the system allows users to track the movement of important files in the process of decision-making. The drawbacks of this system include: security - in any possible hacking situation, all the files can be easily manipulated; also no activity log is implemented for tracking files; the system is platform dependent –runs on a Windows-based server (IIS) and requires proprietary databases as backend.

The implementation language is HTML, CSS, JAVASCRIPT, PHP, MYSQL. In addition, Infotronic Systems for instance have developed a file tracking system that employs Radio Frequency Identification (RFID) technologies. The rationale behind the development of the application is for ensuring that existing files are secure. Each file, in file storage (room) receives a RFID file tag label, depending on the file type. The tag contains the name and other related information, including a unique file number. In the file storage door an RFID security gate (sensor) is implemented so that whenever someone takes a file from the file room and tries to go out without proper clearance, an alarm is triggered and such a person is accosted by security guards on duty. The system is very powerful especially for securing files but the same cannot be said for it being used for arranging or searching files. This RFID-based tracking system can also be expensive to implement particularly by a tertiary institution. The costs include those of buying sensors, label tags, and other essential accessories. This can be a draw back in some respect. Putting it all in perspective, we identify that several tracking systems exist that are being used outside the context of learning institutions like Universities. Such systems despite their merits also have drawbacks that make them unsuited for tertiary institutions. A file tracking system that takes the identified drawbacks into consideration, while also targeting tertiary institutions, is desirable. Companies need to control and manage the life cycle of electronic documents. And one of the answers is to track and trace electronic documents.

Locating files is one of the greatest problems in universities nowadays. Time is wasted archiving or searching files, energy is wasted chasing misplaced files, deadlines are missed and sometimes files are lost. Seeing these

problems, an application was developed to make a system for file tracking that will solve all of these problems in the best proper way. The aim of this project therefore is to design and develop a file tracking system for tertiary institutions. The absence of a well-established Document Tracking System in institutions has led to lots of inconveniences, this result in loss of files, records and documents that would be needed by them. The problem caused by manually documenting files and loosing track of them can only be solved by computerizing your documents and creating a system that would track the movement of the document. The existing software has a basic weakness which includes:

1. Poor tracking of documents.
2. Loss of documents.

1.2 Purpose of the study

The aim of this project is to develop an Electronic Document Tracking System (EDTS) to improve productivity amongst core administrative personnel

The detailed objectives of this project are:

- 1. To develop a database for managing electronic document tracking system.**
- 2. To develop the user interface for tracking document in an institution.**

2.0 Literature review

2.1 The concept of tracking system

The need to keep track of files has become significantly important today particularly in institutions of higher learning. However, little is being discussed about this in literature. In most cases, files are transferred physically from one desk to another within a department or between departments. File Tracking System offers clear visibility of the file movement throughout the file processing channel. Sometimes there is need for a file to go through several personnel before it can be

rendered acceptable. There are however drawbacks in transferring these files from one desk to another such as getting these files missing or forgetting to document the transfer. There is thus need for a system that can provide solutions that will address such problems while saving time and energy of administrative workers. File tracking systems offer a viable solution in this regard. Notable examples of such a system are described in the paragraphs that follow. A file tracking and document tracking software was launched in 2013. The software is a user-friendly barcode-based tracking system. Information and Data Exchange Advanced System (IDEAS) is a file tracking system developed using Free and Open Source Software (FOSS) by the National Informatics Centre (NIC) in Kerala, India. It is developed as a web application and its purpose is to keep track of files coming into a government office (that is, citizens' petitions). Due to its intuitive web interface, government officers are able to easily record or query information about the petitions or files received within their respective offices through the medium of the Internet. Also, users which include both citizens and officers alike can track the movement of files making the system a transparent one.

The drawback of this particular system is that it is built to serve files in government offices and not necessarily Universities or other institutions of higher learning. Putting it all in perspective, we identify that several tracking systems exist that are being used outside the context of learning institutions like Universities. Such systems despite their merits also have drawbacks that make them unsuited for tertiary institutions. A file tracking system that takes the identified drawbacks into consideration, while also targeting tertiary institutions, is desirable. Companies need to control and manage the life cycle of electronic documents. And one of the answers is to track and trace electronic

documents. Locating files is one of the greatest problems in universities nowadays. Time is wasted archiving or searching files, energy is wasted chasing misplaced files, deadlines are missed and sometimes files are lost. Seeing these problems, an application was developed to make a system for file tracking that will solve all of these problems in the best proper way.

2.2 Types of Tracking System

According to Milton Kazmeyer (autotracken.com 2015) there are various types of tracking system of which makes tracking easier thanks to the advance technology available at our disposals of which the following are inclusive

2.2.1 RFID

Radio frequency identification is a tracking technology used in many fields. RFID tags consist of an antenna capable of sending and receiving a radio signal, and a small chip containing the broadcast information. In passive tags, once the device receives a radio signal, the tag uses the energy provided to broadcast a weak response. Active tags contain an integral power source to boost signal strength and range, and are more suited to outdoor tracking. Long distance RFID tracking is directional in nature, meaning that the user can determine the approximate direction and range of the tracked item.

2.2.2 GPS

The Global Positioning System has also found use in tracking devices. GPS trackers contain a GPS receiver, allowing the device to determine its approximate position, as well as some sort of mechanism to allow it to report that data. This commonly takes the form of a radio transmitter or cellular link, but survival GPS locators used in planes and ships often include a satellite receiver for worldwide reach. These devices are bulkier

and more expensive than RFID tracking solutions, but they feature much greater range as well as the ability to pinpoint the tracked person or item instantly from a great distance. When choosing GPS tracking systems, it's important to understand the basic types of GPS tracking systems and how they work. Below are four (4) common types of GPS tracking systems.

1. Hardwired GPS Tracking Devices

Hardwired GPS tracking systems are typically used in vehicles. These GPS tracking systems utilize the power of the vehicle's battery for operation. With the brain of the unit hidden under the hood or your dashboard, these GPS tracking systems sometimes come with antennas that must be attached to the vehicle

2. GPS Loggers

GPS loggers are GPS tracking systems that are used to record information to be retrieved at a later date. For example, a GPS logger can be used to track a vehicle or a shipment, but the information cannot be retrieved from the GPS tracking system until it is manually uploaded to a computer. These are also known as passive GPS tracking systems.

3. Personal GPS Trackers

Personal GPS trackers are GPS tracking systems which look like small beepers or cell phones. They're designed to be handheld, clipped to a belt, or tossed in a purse for individual use. GPS tracking systems for personal use are often purchased for the purpose of personal protection for adults and children. Many personal GPS tracking systems include a panic button for quickly alerting family or authorities in emergency situations.

4. Real-Time GPS Trackers

Real-Time GPS trackers are GPS tracking systems which continuously

transmit information so that users can track their location all the time. Real time GPS tracking systems are highly-sophisticated and require the use of tracking services and GPS tracking software. With real time GPS tracking systems, satellite mapping is used to show the location of the GPS tracking devices.

2.2.3 Geofencing

Geofencing is a more passive form of tracking, and can use RFID or GPS technology. In this system, instead of constantly reporting its location, the tracker contains a receiver that can detect its current location by GPS or by proximity to a radio scanner. If the tracker leaves a designated area, it can trip an alarm or report the violation via a transmitter. One example of this type of system is loss prevention scanners at retail stores, which set off an alarm when an active tag enters their scanning range. Tracking devices for children also use this technology, sending distress signals if they leave designated areas such as home or school outside of approved hours

2.2.4 Internet Tracking

Another method of tracking helps the owners of laptops and other portable computing devices track and recover stolen hardware. Many portable computers feature an optional tracking system in the BIOS that, if activated, can report to central servers whenever the device has a connection to the Internet. This can provide IP information, wireless data for geographic triangulation, and some programs even feature the ability to eavesdrop on thieves' Internet browsing and communications, allowing the user to gather the data necessary to identify the perpetrator and recover their equipment.

2.2.5 Radio Tracking

By adding a power source to a RFID tracker, you can greatly increase the range its signal will travel. These “active” trackers can respond to a wide-band scanning signal, or you can set them to go off periodically for long-term tracking purposes. A common use of this type of tracker is in the field of biology, when scientists tag animals for the purpose of tracking their behaviors or monitoring their health. This type of tracker is easy to implement, but it only provides a directional signal, requiring triangulation and estimation of the signal strength to provide a rough location of the device.

2.2.6 GPS and Satellite Tracking

The advent of the Global Positioning System has led to the development of incredibly accurate tracking devices. A GPS receiver compares signals from a network of satellites overhead to pinpoint its location to within a few meters, providing real-time positional data. Paired with a satellite radio, this can allow a tracking device to report its location anywhere in the world almost instantly, making it a valuable tool in rescue operations. Survival beacons and personal tracking devices often incorporate GPS technology to speed rescue operations, and many cell phones contain GPS trackers to help authorities locate 911 callers in an emergency.

2.2.7 Cell-Phone Triangulation

Even if your cell phone is not GPS enabled, it may contain technology designed to help the provider track the device. If you need to call for help in an unfamiliar location, 911 services can contact your provider and identify which cell towers can pick up your phone's signal. By comparing the signal strength at each of these known locations, they can estimate your phone's approximate location, which may be enough to direct

emergency services to your location. This type of tracking is not as effective in urban environments, however, where signal clutter and echoes from buildings can make it difficult to pinpoint a location to within a few blocks.

2.4 Qualities of a good file tracking system

A document management system (DMS) is a system (based on computer programs in the case of the management of digital documents) used to track, manage and store documents. This system should be capable of keeping a record of the various versions of the documents created and modified by different users (history tracking).

Document management software makes it easy for businesses to combine paper and digital files and store them; physical documents or paper files are scanned and digital formats are imported. File formats supported can range from Word documents, Excel spreadsheets, PowerPoint presentations, PDF files, etc.

Document Management processes are essential to ensure statutory or regulatory compliance, such as tax declarations, conformation to various standards, such as ISO, FDA, etc. Such requirements demand easy traceability of documents and audit trail of document creation, access, modification, approval and submission.

Document management is essential in all sectors: Commercial Businesses, Banking, Non-Banking Finance & Insurance, Government & Non-Government, Education, Healthcare, Research & Development, Construction and many more.

Documents stored in a document management system (DMS)— such as procedures, work instructions, and policy statements—provide evidence of documents

under control. Failing to comply could cause penalties, loss of business due to non-conformance or non-compliance, or irreparable damage to a business's reputation.

Integrated document management comprises the technologies, tools, and methods used to capture, manage, store, preserve, deliver and dispose of 'documents' across an enterprise. In this context 'documents' are any of a myriad of information assets including images, office documents, graphics, and drawings as well as the new electronic objects such as Web pages, email, instant messages, and video.

2.5 Database

A Database Management System (DBMS) is a system in which related data is stored in an efficient and compact manner. It is a set of computer programs that control the creation, maintenance, and the use of the database of an organization and its end users. It allows organizations to place control of organization wide database development in the hands of database administrators (DBAs) and other specialists. A Database Management System is a system software package that helps the use of integrated collection of data records and files known as databases. It allows different user application programs to easily access the same databases. Database Management System may use any of the variety of database models, such as the network model or relational model. In large systems, a Database Management System allows users and other software to store and retrieve data in a structured way.

2.6 Empirical review

Edem and Onwuachu (2014) Developed an Electronic file monitoring system that illustrates how documents in an organization, most specifically the University can be monitored. The University of Port Harcourt

was used to implement this monitoring system. The system is developed with object oriented methodology and implemented with Java programming and Microsoft SQL server. The result of the developed system shows a simple and effective graphic user interface, ensuring privacy for users and effective document monitoring.

Tariq et al (2015) developed and implemented a file tracking-system for the University of Kashmir. It explains design, development, and implementation strategy that can be adopted to implement a web-based file-tracking system for University of Kashmir. A model design of the web based file-tracking system was implemented in Microsoft Technologies using ASP.NET with client and server-side programming for web forms, reports and backend processing performed in C#.NET. MS SQL Server was used as a backend database. HTML, CSS and XML, JQuery, and AJAX was used to make the design appealing.

In 2012, L.M Perocho designed a document tracking system for a medical centre using waterfall model. He automated the document monitoring system using barcodes. The chief of hospital is the major server controller of the system. All types of document enter the system. Hence all communications from within the different section/department or other government agencies are easily monitored or trapped. The hospital as developed by National Informatics Irfan et al (2010), developed file tracking system that offers visibility of the file movement throughout the file approval process. There was no additional client application or software required to be installed as the system is integrated with Lotu.

Delhi, (2010) worked on File Tracking System is web based application to monitor the pendency of receipts and files and assist

in their easy tracking. The application was developed by National Informatics Centre (NIC), based on the Central Secretariat Manual of Office Procedures (CSMoP) of the Department of Administrative Reforms & Public Grievances (DAR&PG). It is an integrated package which has features right from diarizing of receipts/files, updating its status, opening of new files, tracking the movement of the files, dispatch of letters/files and finally records management

3.0 Methodology

3.1 Approach for the Development of File Tracking System

For the goal of this project to pull through without anomalies of any sort, a generally accepted software engineering methodology STRUCTURED SYSTEM ANALYSIS AND DESIGN METHODOLOGY (SSADM) is selected among numerous other methods. The body of methods, rules, postulates, procedures and processes that are used to manage a software engineering project are collectively referred to as methodology.

This method follows some real technical sequence of software development phases that include :

1. Problem identification
2. Feasibility study
3. System analysis
4. System design
5. System implementation and maintenance

3.2 Problem identification

The first phase of SSADM deals with the identification of the existing problems in the old system that actually led to the

development of a new one. Here we carry out a detailed investigation on the existing system to find out its weaknesses so as to put them into consideration for the new one to resolve them.

Some of the problems identified in this work include:

1. Poor data security
2. Slow processing of operations
3. Poor data retrieval speed
4. Data redundancy in the database
5. Poor tracing of files and documents

3.4 Analysis of the proposed system

This phase of the research talks about the critical examination of the activities of the existing system; beginning from the ways data are collected, registered, information flow within and outside the organization, data arrangement etc. to data reviewing, tracking and retrieval.

The essence of the analysis is to shed more light on the various areas of the system that is defaulting and to also find out the desirable features that the present system lacks so as to incorporate the solutions to these problems while designing the new system. In that way, I was able to know precisely what must be accomplished and how exactly it is to be accomplished without interfering with the desirable features of the present system.

3.5 Modus operandi (Mode of operation)

In the present system, I discovered that excess data about a certain file are collected which is one of the major causes of poor system response time.

Files undergo series of processing in different offices in an organization which are all security protocols put in place to adequately safeguard the file from unauthorized

personnel's. Clerks and secretary on the other end serve as the security field agents that work so hard to ensure that files are maintained and do not fall into the wrong hands.

However, it is difficult to find an effective tracking system for the clerks to be able to locate files and keep records of files between the point of creation to the point of processing and finally the point of storage. This is one of the major weaknesses in our organizations aside from storing some incomplete processed files, which this research will help to eliminate entirely.

3.6 Problems of the existing system

These are limitations of the old system that led to the development of the new system in the first instance.

- a. Poor processing speed: The existing system collects excess data in a single file which contributes to poor response time of the system.
- b. Safety of the security processed file is not guaranteed: Normally, it is counterproductive for a file to be lost in the course of it being processed and ready for storage.
- c. Poor database management: The existing system uses distributed database model which sometimes encourages data replication.
- d. Loss of files: The existing system is related with easy loss of files, because most files are kept in a cabinet or shelves which can easily be ravaged by rodents that won't spare the files saved which would lead to loss of files.
- e. Poor funding of tracking scheme: For this reason, some of the working

equipments are poorly managed and lack adequate maintenance. Unqualified staff people are hired because they are willing to take whatever they are paid. No good tracking materials for effective discharging of duties.

How can files be tracked effectively when the present system employed does not allow for standard functioning parts.

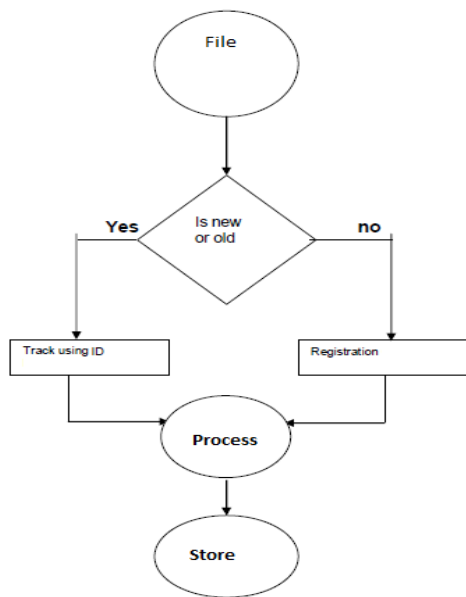


Fig 3.1 Current Manual File Tracking System Flow Diagram

3.7 Justification of the new system

The new system is here to set right the problems of the existing system.

However, the essence of this work is not to change entirely the existing file tracking system but to rehabilitate and strengthen it from all sides. This is because naturally, one tracking system cannot effectively keep track of a file.

- It is user friendly: It is less ambiguous than the existing system, therefore manipulating it will be easier.
- It involves a different concept of tracking down files without having to engage in office to office movement. Therefore, the safety of the file is assured
- It uses relational database mode, which is a type of database that enables a better data management. It has zero tolerance to data replication.
- High processing speed : It collects few but very sensitive data about a file thereby making provisions for good system response time
- High performance of the new system means high chances of tracking more files.

This is good news for organizations, High processing speed / response time : The new system collects few but very sensitive data about a file thereby increasing the speed of processing and good response time.

Design and implementation of the system

The System design involves the process or art of defining the architecture, components, modules, interface and data for a system to satisfy specified requirements. In system design a series of automation boundaries are assumed and alternatives implementation strategies on identified reasonable alternative are selected evaluated and recommendation are made.

System design is centered on the development of specification for the proposed new system which satisfies the demands notice during the system analysis.

The Objective of this work is to DESIGN AND DEVLOP A WEB BASED

DOCUMENT TRACKING SYSTEM that will provide an easy means for users to monitor and track document and send document across users in the system. This system if implemented will help organizations, companies to effectively and efficiently manage the document of the organization.

The main objective of this work is as follows;

1. Online creation of document.
2. Online tracking of document.
3. Ownership of web based provides the customer with the needed information and services concerning the company.

4.1 Design analysis

4.2 Overall system description

4.2.1 Algorithm of the proposed system

Design and development of a web based Document Tracking System is designed for high institutions. The system is made of the following modules: Home, About-Us, create Document, view Document, pending Document, rejected Document. With the help of this web base Document Tracking System, both users and the institution Management will find it easy to transact with-out the fear of disappointments.

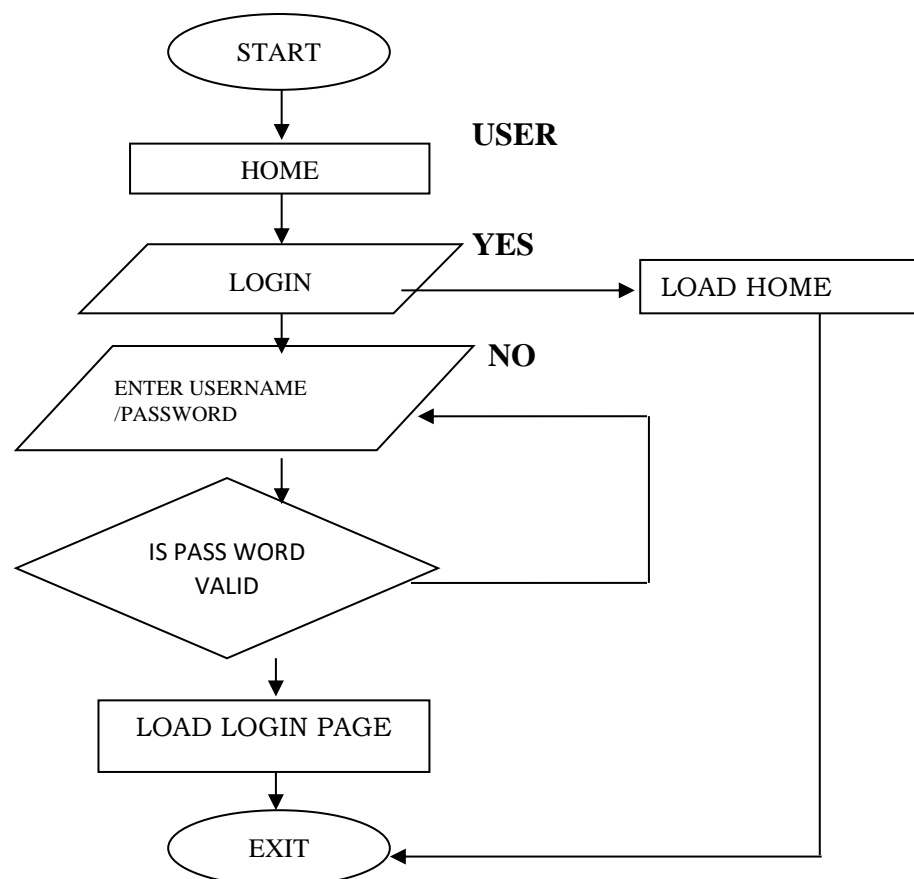
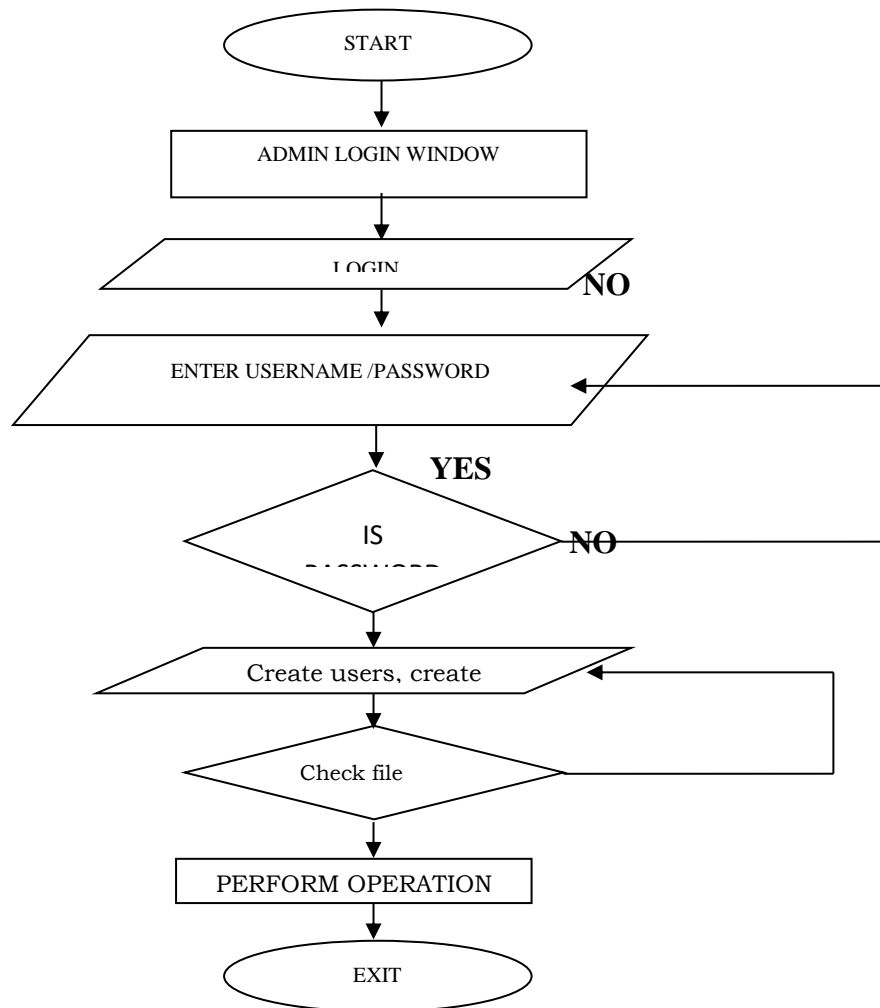
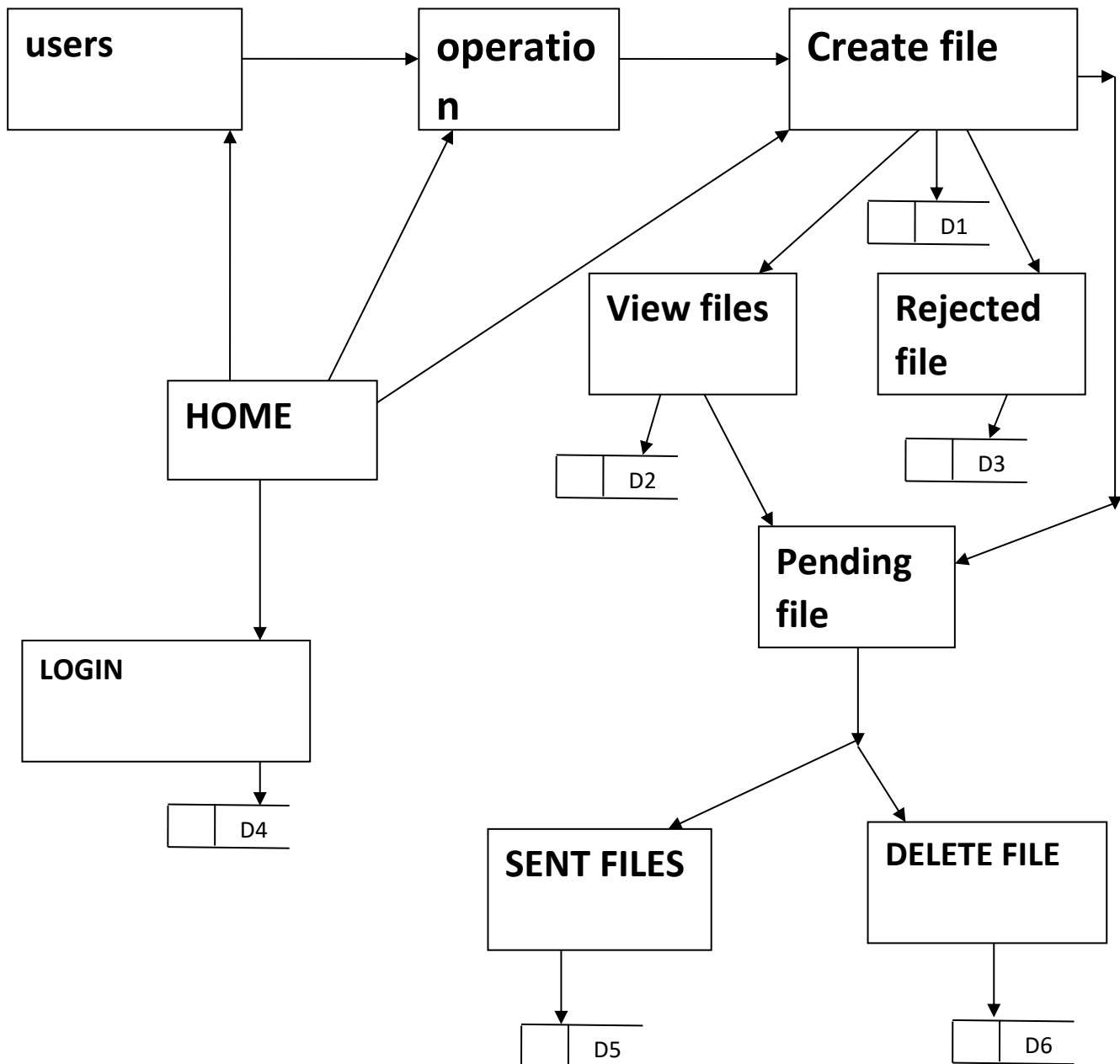


FIG 4.1 THE PROPOSED SYSTEM FLOWCHART

**FIG 4.2 ADMIN WINDOW FLOWCHART DIAGRAM**

**FIG 4.3 OVERALL DATA FLOW DIAGRAM (ODFD) OF THE NEW SYSTEM**

4.3 Database Specifications

4.4.1 Database Structure

Table 4.1 created file Database Design

s/n	Field Name	Datatype	Size	Description
1	Id	Id	20	User id
2	User	Email	20	User
3	File Name	Number	25	File name
4	File Type	Varchar	20	The file type
5	File Size	Varchar	20	The file size

Table 4.2 sent file Database Design

s/n	Field Name	Datatype	Size	Description
1	Id	Id	20	User id
2	Sender	Email	20	User
3	File Name	Number	25	File name
4	File Type	Varchar	20	The file type
5	File Size	Varchar	20	The file size
6	Receiver	Varchar	20	The user receiving the file

Table 4.3 received file Database Design

s/n	Field Name	Datatype	Size	Description
1	Id	Id	20	User id
2	Sender	Email	20	User
3	File Name	Number	25	File name
4	File Type	Varchar	20	The file type
5	File Size	Varchar	20	The file size
6	Receiver	Varchar	20	The user receiving the file

Table 4.4 user Database Design

s/n	Field Name	Datatype	Size	Description
1	Id	Id	20	User id
2	Name	Varchar	20	Name
3	<u>Username</u>	Varchar	25	Username
3	<u>Password</u>	Varchar	25	Password

4.4 Input / Output Design

4.4.1 Input Design

The User Login Page

The diagram illustrates the layout of the User Login Page. It features a large rectangular container. Inside, there are two input fields: one for 'USERNAME' and one for 'PASSWORD', each preceded by its respective label. Below these fields, there is a section containing three buttons: 'Select file', 'Choose file', and 'CREATE'. The 'Select file' and 'Choose file' buttons are positioned side-by-side, while the 'CREATE' button is centered below them.

Table 4.5 Data Dictionary

s/n	Elements	Description
1	Username	Username
2	File name	The user's file name
3	File type	The user's file type
4	Sender	User sending file
5	File size	User's file size
6	Receiver	Receiver receiving the file

4.5 Choice And Justification Of Programming

Language Platform

To design and develop this System PHP, HTML, CSS and MYSQL are used. The choice of the language came as a result of its:

1. Ease of access
2. Flexibility

3. Object Oriented Programming nature.

4.6. Documentation on how to install the software

1. Insert the CD into your pc CD drive
2. Allow to popup or go to your computer
3. Select computer

4. Double click on the Name of the Software
5. Carryout the necessary setup such as name, location to Install ©, company Name etc.
6. Click on finish
7. Allow the application to install which will last for 20 minutes.
8. Insert the CD into your pc CD drive
9. Allow to popup or go to your computer
10. Select computer
11. Double click on the Name of the Software
12. Carryout the necessary setup such as name, location to Install ©, company Name etc.
13. Click on finish
14. Allow the application to install which will last for 20 minutes.
15. Insert the CD into your pc CD drive
16. Allow to popup or go to your computer
17. Select computer
18. Double click on the Name of the Software
19. Carryout the necessary setup such as name, location to Install ©, company Name etc.
20. Click on finish
21. Allow the application to install which will last for 20 minutes.

4.7 Implementation

This takes into consideration the orderly schedule of activities and material requirement of the new system. These are required for program implementation;

- (a) Hardware and software requirement
- (b) Testing
- (c) Training

4.7.1 Program modules specification

1. **Login Module:** This module will allow the admin to create and have an account before login into the system before performing any activity in the system.

2. **Home Module:** This module links all other modules together such as Login, create document, view document.
3. **Pending Document Module:** This module allows users to view the files pending for acceptance or rejection.
4. **Rejected Document Module:** This module users or organization to view their rejected files.

4.7.2 Hardware and system software requirement

Hardware Requirement

- (a) A computer system with the following specification 200 GB Hard disk, 2GB Ram, Pentium M (intel)
- (b) Scanner
- (c) Printer
- (d) Uninterruptible power supply (UPS)
- (e) Stabilizers
- (f) Power generating set
- (g) LCD Monitors

Software Requirement

- (a) Microsoft word 2013
- (b) Internet Information Service (IIS)
- (c) Windows XP, SP2, 7, 8, 10
- (d) Dream waver
- (e) Wamp server
- (f) MYSQL Driver
- (g) Internet Browser (Fire force, Opera)

4.7.3 How to run the software

Running the web software locally.

1. Double click on the wamp server so as to on it.
2. Lunch your web browser
3. Type in the URL in the browsers url textbox (Localhost/project/index.html).
4. The admin login page will open then login
5. Then the home page of the software will open.

4.8 User Training

The system is designed to be user friendly. Any individual who has a basic knowledge of internet browsing/how to operate a computer system can use this application without much stress. All the same users need to have to use the keyboard, how to type in a word processing environment.

Knowledge of How to use ones mobile phone to browse is another advantage because the software does not require much training.

5.1 Summary

Locating files is one of the greatest problems in universities nowadays. Time is wasted archiving or searching files, energy is wasted chasing misplaced files, deadlines are missed and sometimes files are lost.

Sometimes there is need for a file to go through several personnel before it can be rendered acceptable. There are however drawbacks in transferring these files from one desk to another such as getting these files missing or forgetting to document the transfer. Seeing these problems, an application was developed to make a system for file tracking that will solve all of these problems in the best proper way. This will considerably reduce the paperwork and save ones precious time.

5.3 Recommendation

In future, the designed file tracking system may be scaled and enhanced in various ways which can lead the University to paperless e-governance system where in digital files will be used instead of traditional paper based files. Email and or SMS notifications can be sent to file owners notifying them of the status and progress of their files. Mobile apps can be developed to allow officers to view /work on files remotely as well as allow the file owners to monitor the status of their files. Digital signatures can be added to files for the purpose of security and encryption.

5.2 Conclusion

This project has discussed the design and implementation of a web-based file tracking system. The system is designed primarily to track files, especially in an institution. Such a system to the best of our knowledge has not been created for tertiary institutions. To improve on the work however, a pilot study as well as a usability study will be conducted in future work. The feedback from these exercises will be used to improve on the overall features of the system.

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