



Design and Implementation of File Tracking System for Registry Department of Bayero University Kano

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ABSTRACT

In present situation, in any organization file work is mandatory. So every time files are moving from one department to other departments manually is somewhat difficult. In this paper, we developed and implemented a file tracking system for the Registry Department of Bayero University Kano. XAMPP, PHP, MySQL, JavaScript, CSS and JQuery were used for the design. 1.8GHz processor, 1GB RAM and 10GB HDD were server configuration while client configuration was 1GHz processor, 512MB RAM and 1GB HDD which were the hardware requirement for the design of this file tracking system. This paper explained the design, development, and implementation strategy that was adopted to implement a web-based file-tracking system for Bayero University Kano. It reviewed the existing file flow system in the Registry Department of Bayero University Kano, discussed the proposed file-tracking system and its working. Through a design outlay, this paper gave an insight about its working including user screens, roles of users and reports. The system was implemented and found efficient and consistent in file records, resource management and quality of administration, transparency and accountability, thereby helped to reduce turnaround time, and processing delays of files.

ARTICLE INFO

Article History

Received: July, 2019

Received in revised form: August, 2019

Accepted: October, 2019

Published online: December, 2019

KEYWORDS

File tracking, Web application, Form, Markup-language, Open source software.

INTRODUCTION

Locating files is one of the greatest problems in Registry Department of Bayero University Kano nowadays. Time is wasted archiving or searching files, energy is wasted chasing misplaced files, deadlines are missed and sometimes files are lost. Presently, there is no any automated system for tracking the status of any physical file in Bayero University Kano. University Staff must have to contact a Registry Department Staff to know the current status of his or her file and University has no automated record keeping system, which indicates the need of much faster and reliable tracking system that can be accessed from global. It is desirable to design and implement fast and efficient file tracking system which consider Nigerian factors which include inadequate power supply, inadequate internet services, low cost and good security.

United States Citizenship and Immigration Services (USCIS) uses National File Tracking System (NFTS) which is an automated file-tracking system used to maintain an accurate file inventory and track the physical location of files. This system facilitates USCIS's ability to efficiently manage the streamline access to the millions of immigration files under its

control (Hawkins, 2010). This is achieved by using a primary tracking number and immigration files;

- i. Alien File (A-File) - files created for aliens seeking immigration benefits (i.e., lawful permanent resident, naturalization), aliens who illegally entered the U.S., or other individuals subject to the provisions of the Immigration and Nationality Act (INA);
- ii. Certificate Files (C-Files) - files created for aliens naturalized prior to April 1, 1956;
- iii. Receipt File – files created for both immigrant and nonimmigrant benefit applications. The receipt files for immigrants benefit applications will eventually be consolidated into an A-File;
- iv. Temporary File (T-File) - temporary files created to store documents when the A-file is in another office location. When the office receives the A-File, the documents are merged with the A-File.
- v. Work Files (W-File) - files created to place copies of original documents



from the A-file. Work files to be used for note taking and writing drafts. Drafts are then finalized and placed in the A-File.

Islamic Bank of Malaysia (BIMB) is one of the first Banks to implement a sophisticated Radio Frequency Identification (RFID) system known as Solmate™ Document Management and Tracking System to manage and track their files (Berhad, 2010). Solmate™ DocTrax handles a comprehensive solution from Digitization of all Credit's documents to Physical storage filling system. The system is used by over 80 branches throughout the country with 8 major File Storage Centre. The Solmate™ application provides a working flow for BIMB to manage and register files. All request and loans required by branches will have to go through the system for approval process and circulation. All documents can be viewed via the system and request online. The Solmate™ application is fully integrated with core banking backend database for reference and verifications. Over 20 units of RFID Readers/Writer and more than 10 mobile RFID readers deployed to BIMB locations around the country.

In the United Kingdom, Alliance Company developed a Record Management and File Tracking System called Alliance PaperChase which is barcode driven archive and record management software (Group, 2016). It was designed to identify and track physical documents such as customer files, patient records, planning applications, internal documents, working papers, incoming mail and materials. The software helps record managers and users to; register files and documents as 'records' by printing and attaching a barcode or RFID label, store records in their appropriate classifications along with the prescribed metadata, search for and retrieve records when required, manage retention schedules, destroy records according to prescribed schedules and track the access of the record over its active and in-active life cycle. Each document (folder of document) is given a unique barcode label to identify it. An item may then be registered at a location simply by scanning its barcode identification label. RFID (Radio Frequency Identification) smart labels may be used instead of barcode labels.

Also in India, Information and Data Exchange Advanced System (IDEAS) is an advanced file information system developed by the National Informatics Centre in Kerala, India (Telepen, 2013). It was built on Free and Open Source Software. It is a

web based application for file tracking system which records details of the files that come into a government office (petitions which are received from citizens). Officers can use the web interface to record or query information of the petitions or files within their offices using Internet or the government's own State Wide Area Network. Citizens and officers alike can obtain online information about the movement of files. It is currently used in the many offices of Ministers and Administrative Departments in the Kerala Government Secretariat. This system has also been implemented in the Office of the Transport Commissioner, Office of the Director of Technical Education, Legislative Assembly and the Kerala State Planning Board.

The Qatar Public Prosecution (QPP) office is now operating what is thought to be the largest RFID-enabled file-tracking system in the world. The RAIN RFID (UHF) solution was provided by distributor and systems integrator OGTech Technology Solutions, and the system exclusively uses SMARTRAC's DOGBONE inlays. With more than 1,000 read points spread across a 46-story tower housing the QPP, the system enables the office to track the movements and locations of 70,000 files down to a particular corridor, office or stairwell. The solution also includes a loss-prevention functionality that complies with QPP's strict security regulations and automatically activates alarms whenever somebody tries to take files out of the premises without authorization. (Smartrac, 2018)

Putting it all in perspective, we identified that several tracking systems exist that are being used outside the context of learning institutions like Universities. Such systems despite their merits also have draw backs 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.

METHODOLOGY

The automated File Tracking System was developed to be implemented in paper-based work offices, especially Registry Department who deal with a huge amount of files. Everything will be programmed in such a way that will make the usability as easy as possible. It is going to be a web platform which will be reliable, secure and easy to used. It was developed as a web application with three-tier architecture. HTML and CSS are ones that are used to structure the design of this web

application. They are quite easy in implementing and providing a lot of functionalities. JQuery and JavaScript were used in order to create some interactions on the web application. Hypertext Pre-processor (PHP) will be used handle data transfer from the user interface to the database and also query requests to the database from the user interface. The reasons for choosing PHP is that: it is a widely-used, open source scripting language; also, PHP is free software and runs on multiple platforms making it platform independent; PHP is compatible with almost all Web servers in use today (Apache, IIS, etc.) The database management system used is MySQL. It is the world's most popular open source

database, enabling the cost-effective delivery of reliable, high-performance and scalable Web-based and embedded database applications. The automated File Tracking System will be able to finish the job in seconds.

RESULTS

Use Case Diagram

This module allows the user to create, and delete Locations and allows the managing of users, files and all other configurations. From the figure below, in order to do any action, a user must be logged in. When the job is done, he/she has to sign out from the system.

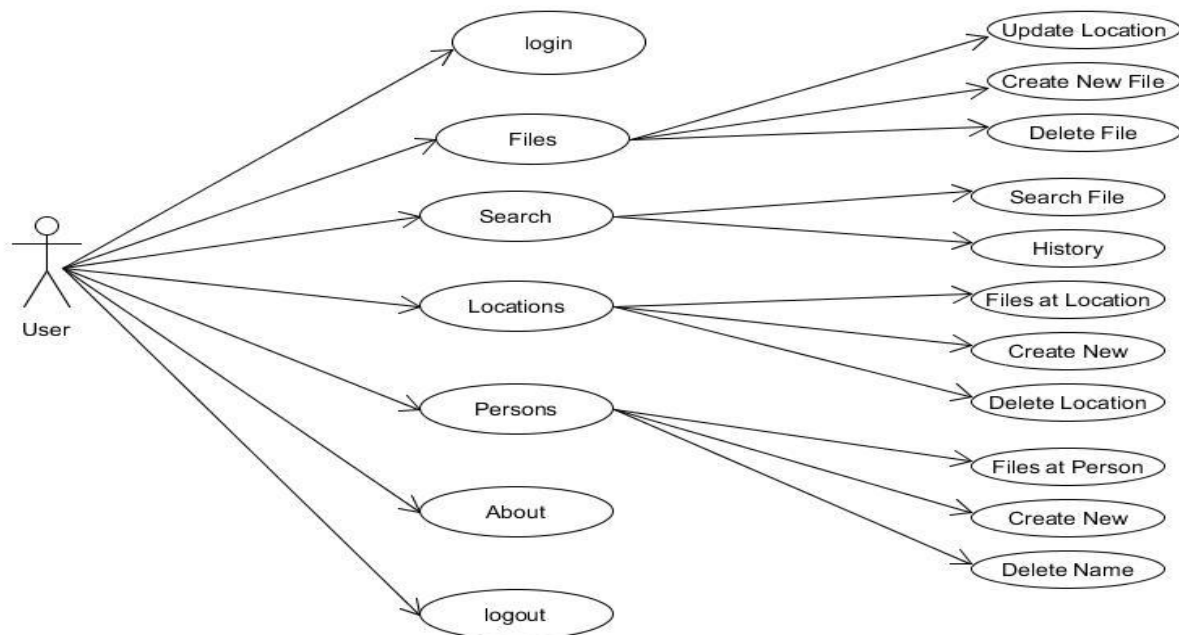


Figure 1: Use case diagram of the File Tracking System

Deployment Diagram

In the below deployment diagram of the system execution, the user sends a specific request from the web application to the server via HTTP protocol. There the request is analyzed and send to

the MySQL Database if needed. When a process is finished with the execution, it comes back to the user and is shown to him as an interface from the web browser.

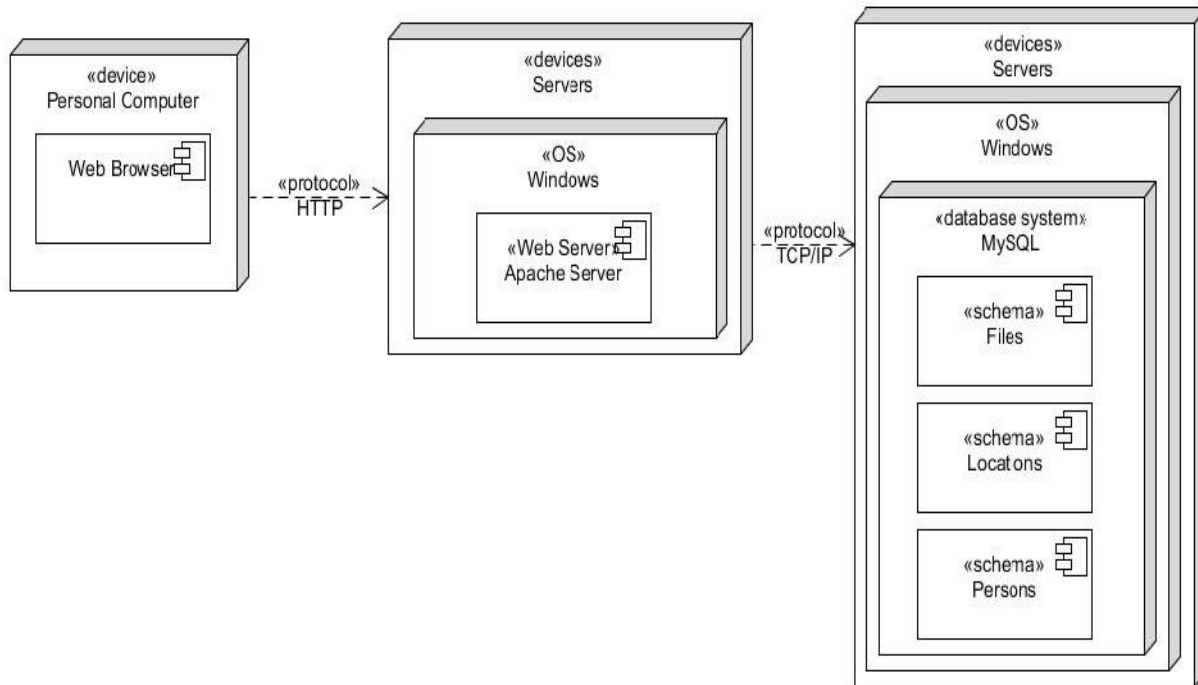


Figure 2: Deployment diagram showing execution of the system

Register Page

This interface allows the user to register on the system. The user will be required to provide

his/her username, password, name and post. The register page is shown in Fig. 3 below



File Track System, Bayero University, Kano

LOGIN		REGISTER	
REGISTRATION	Username	<input type="text"/>	REGISTRATION
	Password	<input type="password"/>	
	Name	<input type="text"/>	
	Post	<input type="text"/>	
	Reset	<input type="button" value="Register"/>	

Figure 3: Registration Page of the File Tracking System.

Login Page

This is an interface that gives the user access to the system. When the application loads, it will prompt the login interface which requires the

user to enter his/her username and password and then click the login button. The login page for users is shown in Fig 4 below



File Track System, Bayero University, Kano

LOGIN**REGISTER**

Username

Password

Login

Figure 4: Login Page of the File Tracking System.

Files Page

The system displays this page when a user logged in. User can check the current file location using the file name or number and the system will display the current file location and the person currently with the file. Also, after a file is treated,

user can set the new file location, the person responsible (who the file will be forwarded to) and comments. Once the user clicked the update button, the file new details is updated. The screen is as shown in Figure 5 below

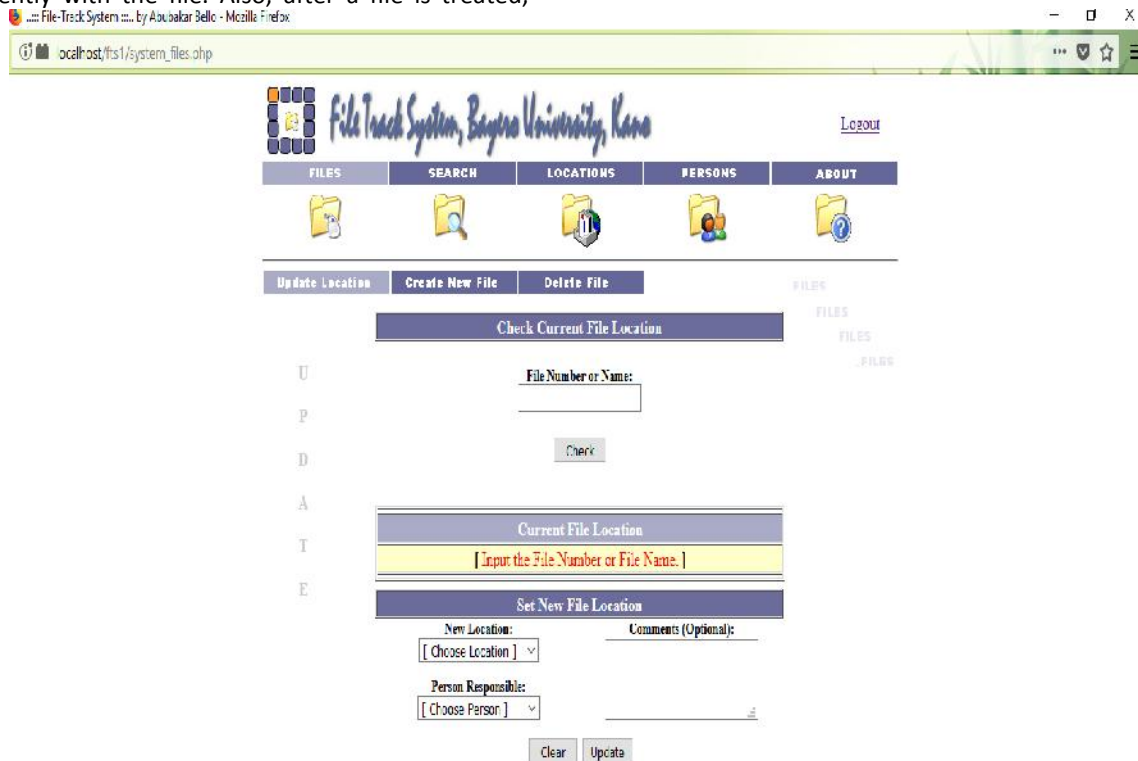


Figure 5: Files Page of the File Tracking System.

Location Page

This module helps to determine the location of a file irrespective of its geographical location. The user can select a location to track the

files that are in that specific location. The system displays the file number, file name and the file description as shown below in Fig. 6 below

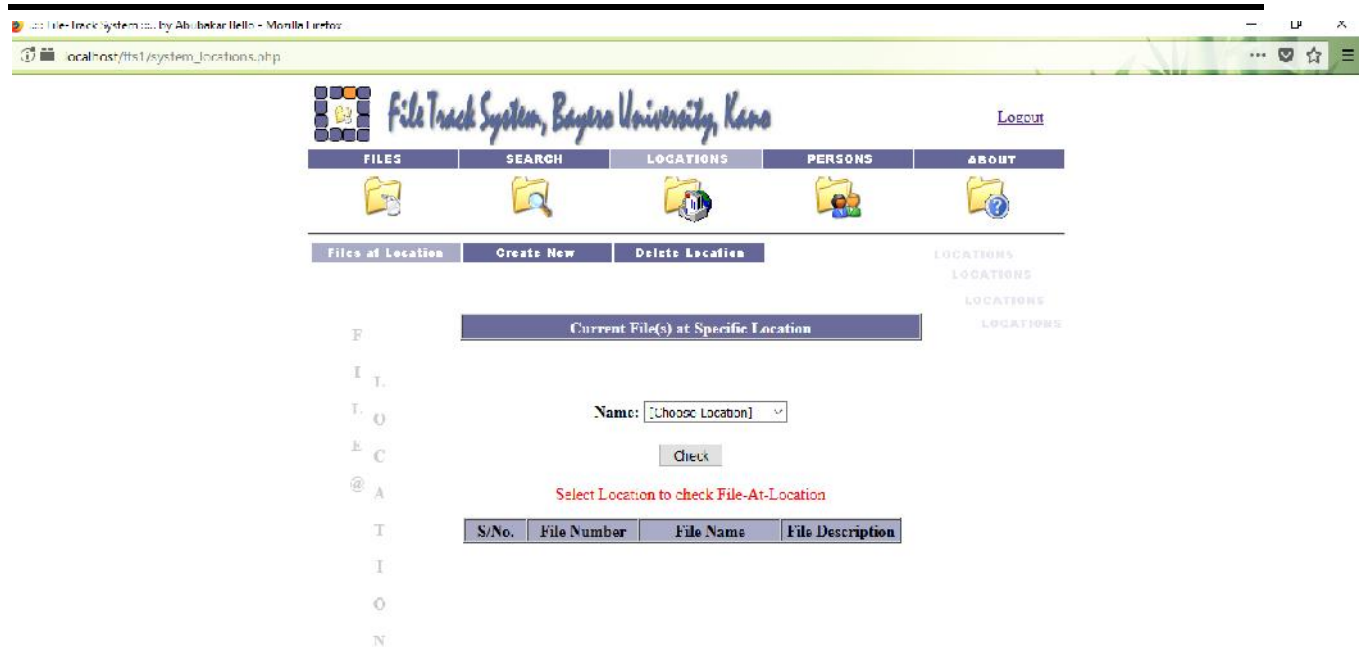


Figure 6: Location Page of the File Tracking System.

Persons Page

This module helps to determine the file that is with a specific person (Officer responsible). The user can select a person to track the files that are

with that specific person. The system displays the file number, file name and the file description as shown below in Fig. 7 below



Figure 7: Persons Page of the File Tracking System.

DISCUSSION AND CONCLUSION

This paper has discussed about a Web Application which aims to serve offices that has to do with paper work, especially Universities, in the best way possible. The goal of this web application is to improve file management, increase staff

efficiency, save staff energy and time, reduce cost and improve the work efficiency by using the latest and fastest technologies. The one important thing that needs to be mentioned in this conclusion is that from the research I have done on file tracking systems, there is no file tracking system developed



or implemented for Universities at all. There are some file tracking systems used for some other purposes (governmental purpose) implemented in few countries, however they are also some simple ones who tracks only receipts. Hence, I took this condition as a favour and hope that the project I developed will have a massive usage worldwide in the near future.

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