

Development of Electronic Document Archive Management System (EDAMS): A Case Study of a University Registrar in the Philippines

Las Johansen B. Caluza
lasjohansencaluza@lnu.edu.ph
Leyte Normal University

ABSTRACT

The traditional method of data storage has shown its impact in managing documents from security, retrieval, and monitoring. Many kinds of literature suggest that this approach would result in low job satisfaction rating from its clients. Leyte Normal University's Office of the Registrar is no escape in this dilemma. In November 2013, the university experienced the strongest typhoon ever recorded known as *Haiyan* locally known as *Yolanda*. The archive/storage area of the Registrar was heavily affected were most of the documents scattered and deteriorated. With this experience, it is empirical to study to provide a practical solution. The researcher utilized embedded single case study using thematic analysis in identifying the issues and coping strategies of the seven participants through in-depth interviews, focus group discussion, and observation. Moreover, the utilization of Systems Development Life Cycle's Sashimi model in developing the software was carried out. The result revealed various issues and coping strategies mentioned by the participants, from a limited storage area to difficulty in document retrieval and monitoring, and from the utilization of logbook to misclassification of records. Finally, the results became the basis for developing the electronic document archive and management system (EDAMS).

KEYWORDS: software development, qualitative-case study, systems development life cycle, Philippines.

1. INTRODUCTION

Information systems have shown its significant impact and importance in the digital age. A study reveals the benefits of having a digitmiesal process were fast and increased productivity, better monitoring, high level of accuracy, and high level of consistency of information [1]. Many organizations are developing information systems designed specifically to facilitate the sharing and integration of knowledge [2]. Despite the application of technologies, there are still using the manual process of data storage and retrieval which hinders the productivity, efficiency, and accuracy of information and the quality service itself [3] identified four (4) problems in traditional methods of data storage such as it takes too long to acquire, it costs too much regarding maintenance, it is not scalable enough, and it requires too much commitment. The use of the manual process of data storage and traditional methods of data storage still exist in the university. As observed, many students transact the University Registrar every day, which the Staff needs to attend this diverse client and request. The tendency of data filing, retrieval, and releasing of documents will be affected due to the current set-up and processes they are dealing. These gaps identified by the

literature and through observation are the primary concern of this study.

2. FRAMEWORK

Build automation theory is the act of scripting or automating a wide variety of tasks. Build automation includes managing the pre and post compile and link activities. There are many advantages in building automation systems. Among those were improved product quality, accelerate the compile and link processing, eliminate redundant tasks, minimize "bad builds," eliminate dependence on the main personnel. Also, have a history of builds and releases to investigate issues, Save time and money - because of the reasons listed above. In Agile software development, having a computerized system or using working software allows us to measure how fast we produce results. Which in this case, the theory would like to imply regarding acceleration of the process, eliminating redundant task, and save time and money in general.

A systematic process through process transformation from manual to computerize is now the trends and keeps on moving forward. The use of Systems Development Life Cycle (SDLC) in developing systems plays a vital role in information processing. This theory was once compared the then and now by Computer World and the article says "Software development consisted of a programmer writing code to solve a problem or automate a procedure. Nowadays, systems are so big and complex that teams of architects, analysts, programmers, testers and users must work together to create the millions of lines of custom-written code that drive our enterprises [4]" In developing Information Systems (IS) using SDLC are

the most appropriate methodology and the most commonly used for systems development analysis and design effort [5]. In support of the SDLC theory in developing systems Samanga Amarasinghe [6] stated that "Software development is the process whereby one creates a set of instructions that directs a computer to perform a given task(s) in a particular order, using specified hardware devices, memory allocation, and others." SDLC has different types of models which software developers can choose from based on its usefulness and appropriateness of the kind and purpose of the system to be developed. Some of these were the Iterative model, Waterfall model, Sashimi model, Spiral model, Fish Bone or Ishikawa Diagram, and Prototyping. In Software Engineering, it is a part of an approach called Software Requirement Analysis (SRA). This SRA presents the requirement gathering process that intensifies and focused specifically on software. In this method, to further understand the nature of the software or program(s) to be developed, the researcher or software engineer must understand the information domain for the software, as well as required function, behavior, performance, and interface [7]. The theory mentioned serves as a vital benchmark towards the development of the system.

3. THE STUDY

This study utilized embedded single-case study design using thematic analysis approach. Wherein the main instrument was an interview conducted by the researcher, including narratives of the participants about the current situation in the workplace. As a faculty of Information Technology and

Computer Education unit of the Leyte Normal University and the interest in systems development and web engineering area, the researcher observed in the daily transactions in the registrar office, the researcher became interested in creating a system that the Registrar will benefit from and the university itself regarding quality service.

This study would like to investigate the process of document retrieval and record keeping of the paper archives of the Leyte Normal University Registrar. Moreover, the researcher would like to develop a digital document archive of all pertinent student documents that were not found or included in the current Integrated School Information System (ISIS).

Specifically, this study would like to seek the following questions:

1. What are the issues faced by the office of the university registrar in dealing with documents received from the students, monitoring, and retrieval?
2. How do they cope up with these issues?
3. Based on the results of this study, what System can be developed to solve their problem in data management, monitoring, and retrieval?

En route to resolve the current dilemma found in the university registrar office, the researcher was requested by the university registrar to create a system that will handle and listen to the workload of its personnel. This study utilized embedded single-case study using thematic analysis. In the development of the system, the researcher used the fusion of Iterative and

Waterfall Method in Systems Development Life Cycle (SDLC). A Lifecycle covers all the stages of software from its inception with requirements definition through to fielding and maintenance [8]. The use of process model in SDLC is a practice by which systems developers use and follows before, during and after the development of a system which will become a product called software. With this project development, the researcher uses the *Sashimi model* originated by Peter DeGrace and an additional feedback mechanism of Waterfall model.

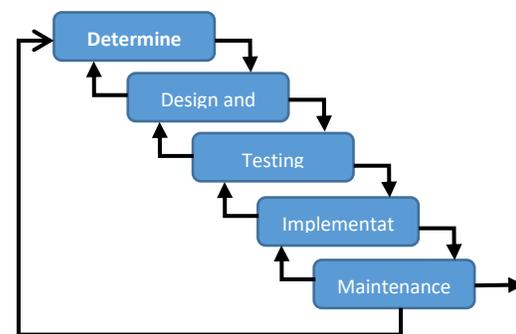


Figure 1: Sashimi and Waterfall Model

Waterfall model in software development methodologies is one of the most widely known and recognized methodologies. It suits for projects where the requirements are clear. Using the Waterfall software development life cycle, the implementation of the system preceded by requirements definition, analysis, design and development [9]. The researcher uses this method because the system will continuously improve for further enhancement of other transactions into the system. In effect, a system for the university registrar will be developed and utilized.

3.1 Determine Requirements and Analysis

This study was conducted at the Leyte Normal University specifically the retrieval of student request of pertinent records that were not included in the ISIS like document retrieval such as Transcript of Records (TOR), Diploma, Form 137, Form 138, Honorable Dismissal, Good Moral, Birth Certificate (NSO), Marriage Certificate (NSO), Certificate of Transfer Credentials, Informative Copy of Transcript, Original Copy of TOR. Currently the university registrar process around an average of three hundred (300) request per day, whether the information found in the ISIS or the Student Archives. This enormous number of transactions per day will affect the service of the university registrar. In effect, a request of a particular clientele would take time due to this reason.

Quantitative design using the descriptive method and qualitative design was utilized by the researcher to determine the detailed responses of the respondents towards the processes and transactions in the University Registrar's Office, and a narrative response from the respondents was also conducted to gather more information. A survey questionnaire was used as its primary instrument and supported by interview and observation to fill in other ambiguous processes, transactions, and questions.

3.2 Design and Coding

In this phase of the spiral model, the researcher starts the development of the software using software engineering best practices such as planning, requirements, and analysis, change control, quality control, progress and maintenance, and support after delivery of the product [10]. To facilitate the

requirements of the system, the researcher uses programming languages such as hypertext pre-processor (PHP) programming as the main computer programming languages for web development system. PHP programming was created by Rasmus Lendorf and was commonly known before as **Personal Home Page** and continuously improved by rewriting its parser by Zeev Suraski and Andi Gutmans and later introduce to Zend scripting to deliver higher performance and supported by running under the web servers like Apache as a native server module [1e]. Other scripting languages where JavaScript to facilitate the data manipulation before its processing in the server-side scripting of the system. The use of HTML5, which is the latest version of the Hyper Text Markup Language (HTML) for web development document creation and the use of Cascading Style Sheet version 3 (CSS3) as the latest version in web designing. To enhance more the design and system prototype the researcher uses Twitter Bootstrap created Mark Otto and Jacob to facilitate the look-and-feel of a system in web engineering. A bootstrap is an open-source JavaScript Framework set up by the team at Twitter. It is a combination of JavaScript, HTML5, and CSS3 to give an easy creation of web design and functionalities of a website [12]. Through the use of these latest software development programming languages and scripting languages, the development of systems will be easy, manageable, and fast.

3.3 Testing

Since the researcher uses the sashimi model and obvious improvements to the waterfall and other models in SDLC is during the

testing phase of the project. Testing occurs as part of the development proves and then again in the context of the deployment process. There are several different types of testing; the researcher uses the following: System testing, Functional testing, Performance testing, Loading testing, and Compatibility testing [9].

3.3.1 Function Testing

Modules, subprograms, and other related system functionalities were tested by the researcher/developer to understand the risk part of the program further and be able to respond necessary action or solution to the problem identified by the researcher and the registrar's personnel.

3.3.2 Performance Testing

In this phase, the researcher does some trial and observation of the actual system performance during Loading and Compatibility Testing. In which, observation in real time processing in this phase was performed.

3.3.3 Load Testing

This testing phase includes actual document sample scanning and feeding information to the system. The researcher observed how the system behaves during and after information attachment and data storage or saving to the system.

3.3.4 Compatibility Testing

Compatibility issues were undertaken by the researcher by checking the hardware components such as scanners that will be used for document scanning to produce electronic copy, server computer to serve as the controller of the system to avoid possible computer hacking and virus attack. However, it is limited to network username and password regarding system's protection. The client side computer is also tested to understand the behavior further and its compatibility regarding data processing.

3.3.5 System Testing

The actual system testing and determining the quality of clean data, time processing, and overall performance of the developed system was performed in this phase. To be able to accomplish this phase the researcher together with a representative of the office of the University Registrar conducted and followed software engineering techniques and approaches in testing and quality assurance by passing several testing phases mentioned above such as Function, Performance, Loading, and Compatibility Testing.

3.4 Implementation

After the software quality testing, transfer of technology will follow, wherein technology transfer agreement is carried out between the researcher/developer of the software and research and the implementing agency (the university). R.A. 10055 also known as the

“Philippine Technology Transfer Act of 2009” [13] says:

An act providing the framework and support system for the ownership, management, use, and commercialization of intellectual property generated from research and development funded by government and for other purposes.

It is this premise that the technology developed by the research had to transfer to the university as a result of its investigations, being one (1) of the core functions of a government employee in the education sector. Moreover, a proposal to conduct and transfer of technology by the researcher and the implementing agency or its sub-office (*the Registrar*) of the university. The University, upon accepting the said developed software, a memorandum of agreement (MOA) will be arranged and be signed by both parties. Technology Transfer Arrangement refers to conventions or agreements. Technology transfer includes renewals thereof, including the transfer of systematic knowledge for the manufacture of a product. It is also the transfer of the application process, or rendering of a service, including management contracts; and the transfer, assignment or licensing of all forms of intellectual property rights, including licensing of computer software except computer software developed for the mass market [14]. Training will also be done

and will be included in the proposal and will consider the availability of the researcher and the end user (registrar personnel). After which, the installation process will follow.

3.5 Maintenance

Several stages performed in maintaining the system where some of which were prerequisites and required knowledge involved, like PHP programming skills, networking skills, database management systems skills, and designing skills. Troubleshooting of the developed system is easy provided that the above criteria be satisfied.

4. RESULTS AND DISCUSSIONS

Theme 1: Issues Faced by the University Registrar

The issues faced by the University Registrar showed in figure 2 illustrate through a qualitative schematic network. One identified issue was a *limited storage area* which due to limited space in the university and the effect of natural disasters like typhoon, earthquake, and fire. Recently, the university experienced the strongest typhoon ever recorded with international name “Super Typhoon Haiyan” that destroyed almost 90% of infrastructures like buildings in the university resulting to heavy damages of storage area and the office of the university registrar.

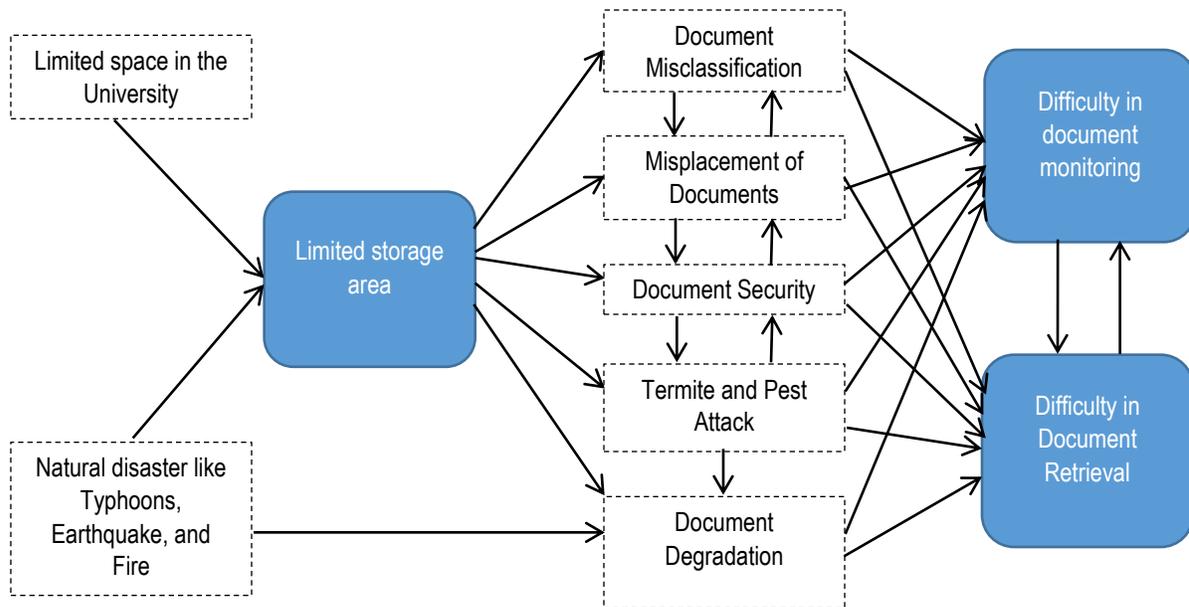


Figure 2: Schematic Network of Issues Faced by the University Registrar

According to the Staff of the University Registrar during the interview, “*Most of the documents in the storage area were wet and disarranged due to strong winds and heavy rain. Some of the documents were blown away that causes to misclassification and degradation of records.*” Having a limited storage area causes document misclassification, misplacement of documents, document security is at stake, termite and pest attack, and document degradation. The following causes mentioned above would result in *difficulty in the document monitoring, difficulty in document retrieval*, and contrariwise. These issues give dilemmas to the Office considering that the records they are keeping are student’s records and other pertinent information about the students that in the future these documents will be requested by the stakeholder.

Theme 2: Coping Strategies of the University Registrar

Coping strategies identified and mentioned during the interview and observation with the participants was established. Among those coping strategies were asking support from the administration through the *budget allocation* of requests through Annual Procurement Plan (APP) of the University. Through APP, the office was able to apply for *maintenance technologies and infrastructure*. As mentioned by the participant, she said: “*The University always has strong support to the office through APP, where all requests were given like air con, shelves, glass separator and protector, individual enveloped filing and a lot more.*” However, the *release* of these requests also *takes time*. That hinders the efficiency of the office, with this situation that office resorted to using *Log book* of all documents received and released to the stakeholder. Using the log book as attested by the participants would result in *improper filing* and would *take time of releasing documents*.

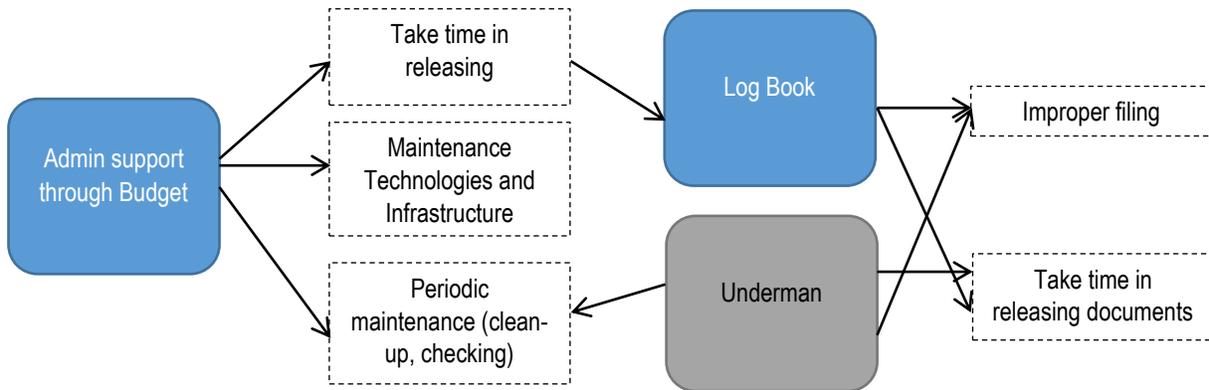


Figure 3: Schematic Network of Coping Strategies of the University Registrar

Further, despite this budget support, the office is still lacking Staff to help them manage stakeholder's request, especially that the University is getting bigger in student population both in the Undergraduate and Graduate Students. According to the participant *"We are under man, we lack Staffs in the office to help us in managing the Office, that is why we have periodic maintenance in the storage area and rotational assignment as to who will be assigned in cleaning and checking the documents in the storage area."* Being *under-staffing* would result in inefficiency and unsatisfactory performance of the office and would affect the service quality render to the stakeholders like graduates, parents, the students itself, and others transacting the office.

Developed Software

Figure 4 shows the Login form of the system. This form is the primary security mechanism of the system against intrusion or unauthorized user.

Figure 5: Adding New Record



Figure 6: Search Result

Figure 5 shows adding new record to the system. This is where the user of the system input basic information about the owner of the document received from the client like NSO Birth Certificate, Form 137, Honorable dismissal, TOR, and others.

Figure 6 shows searching student's records through Student ID or Family Name also the result of the search key. This mechanism is for fast searching and retrieval of documents of a specific student or graduate.



Figure 7: Searching List Form

Figure 7 shows the searching list form indicating a specific list of student's records

specified by the user by student number and by year (from – to). This form is another way of generating reports by a list of students with submitted pertinent and required documents of the University through the Office of the Registrar.

Figure 8 revealed the result from figure 7 showing the search list result from displaying the result by Graduate or Undergraduate by Program, Sex, Document Status, Enrolled as, and a list of the available year(s) per program.



Figure 8: Searching List Result Form

Figure 9 shows a sample list report generated from figure 8 by program showing the Student Number, the name of the Student, Sex, Document Status (complete or incomplete), Enrolled as (regular or irregular), and Enrollment Status (Active or Inactive). The result showed in alphabetical order of Family Name and arranged using pagination.

STUDENT ID	STUDENT	SEX	DOCUMENT STATUS	ENROLLED AS	ENROLLMENT STATUS
1401201	ABAYATO, GIA GRACE MORLEN	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401191	ABOGO, LEE ROBIN BALAZO	MALE	INCOMPLETE	REGULAR	ACTIVE
1401215	AGULAH, JAN ULISCO MANUEL MILAN	MALE	INCOMPLETE	REGULAR	ACTIVE
1401218	ALDAO, KYLLIE JOSHUA ANILO	MALE	INCOMPLETE	REGULAR	ACTIVE
1401200	ALTI, NECK CARITALLA	MALE	INCOMPLETE	REGULAR	ACTIVE
1401219	AYONGUE, AJ LYNDON DUDY	MALE	INCOMPLETE	REGULAR	ACTIVE
1401267	BACODCO, BRENN JANNEY MAGALONA	MALE	INCOMPLETE	REGULAR	ACTIVE
1401216	BACHTINA, GRACE DAYOLA	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401221	BALAZAH, ADRIAN PALAJA	MALE	INCOMPLETE	REGULAR	ACTIVE
1401269	BASIANO, JOHN CARL MALATBALAT	MALE	INCOMPLETE	REGULAR	ACTIVE
1401205	BEJIAL, HENALYN	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401222	BHAYO, HISA JANINE CORON	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401206	CALLOS, CHARMAGNE FENAJOS	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401209	CAPRAL, MARIELLE CABRAL	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401283	CAYON, ARHYN JUNTILLA	MALE	INCOMPLETE	REGULAR	ACTIVE
1401210	CASARES, ZYNA MAE ESQUERDO	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401227	CASILLAS, ELIZABETH ESTON	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401211	CASTELLANO, SHIRLYN COLLOQUIO	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401286	CATAN, MICHELLE JADE TRISPELES	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401212	DIAGAN, JONALIE	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401285	DURAN, MERYL MENDEZ	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401221	DURANA, ANGE ROSE NORRIGA	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401288	ESTREBACH, GINA DY	FEMALE	INCOMPLETE	REGULAR	INACTIVE
1401214	FUENTES, ARRAH JANE ROMEO	FEMALE	INCOMPLETE	REGULAR	ACTIVE
1401271	HOLASCA, DONNA FE OPIERA	FEMALE	INCOMPLETE	REGULAR	ACTIVE

Figure 9: Sample List Report Result

STUDENT ID	STUDENT	MANDATORY	OPTIONAL	ORIGINAL	REMARKS	STATUS
1401211	ABAYATO, GIA GRACE MORLEN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401191	ABOGO, LEE ROBIN BALAZO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401215	AGULAH, JAN ULISCO MANUEL MILAN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401218	ALDAO, KYLLIE JOSHUA ANILO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401200	ALTI, NECK CARITALLA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401219	AYONGUE, AJ LYNDON DUDY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401267	BACODCO, BRENN JANNEY MAGALONA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401216	BACHTINA, GRACE DAYOLA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401221	BALAZAH, ADRIAN PALAJA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401269	BASIANO, JOHN CARL MALATBALAT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401205	BEJIAL, HENALYN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401222	BHAYO, HISA JANINE CORON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401206	CALLOS, CHARMAGNE FENAJOS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401209	CAPRAL, MARIELLE CABRAL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401283	CAYON, ARHYN JUNTILLA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401210	CASARES, ZYNA MAE ESQUERDO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401227	CASILLAS, ELIZABETH ESTON	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401211	CASTELLANO, SHIRLYN COLLOQUIO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401286	CATAN, MICHELLE JADE TRISPELES	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401212	DIAGAN, JONALIE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401285	DURAN, MERYL MENDEZ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401221	DURANA, ANGE ROSE NORRIGA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401288	ESTREBACH, GINA DY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401214	FUENTES, ARRAH JANE ROMEO	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401271	HOLASCA, DONNA FE OPIERA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE
1401212	HOLASCA, DONNA FE OPIERA	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INCOMPLETE ACTIVE

Figure 10: Sample Monitoring Form Generator

Figure 10 is another report generated from the system showing the sample Monitoring Form. This form shows the Student Number, Student's Name, mandatory document status, Optional documents and status, Monitoring Remarks, and Status of the Student. This form helps a lot to the Office because this is where they will see and monitor the required documents, especially when the student is about to graduate. Through this report, the Office can easily provide and quick feedback to the student as to what documents are still lacking.

Figure 11 shows form in managing the system also known as the Maintenance Form where adding new programs, document type, a list of programs, and a list of documents currently saved in the system. Also, this form performs editing and deleting programs and documents.

Figure 11: Maintenance Form

5.0 CONCLUSION

In developing systems, it follows specific processes to produce the desired output. In this case, the issues faced by the office also revealed, such as limited storage area, misclassification, misplacement of the document, document security, termite, and pest attacked, difficulty in monitoring, and difficulty in document retrieval. On the other hand, several coping strategies were also identified by the participants like asking budgetary support, the use of a log book, periodic maintenance, and the use of maintenance technologies and infrastructure. However, despite these coping strategies, drawbacks are still present like releasing on a budget take time, improper still happens, undermanned, and releasing of documents to the stakeholders still takes time. As a result, the development of an electronic document archiving management system was made to aid the problems faced by the Office. Finally, a follow-up study must be conducted to measure the effectiveness of the system, the performance of the scheme, and acceptability of the developed system.

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