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Record Management System with Document Control

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ABSTRACT: The primary purpose of this study was to provide a new way of keeping and retrieving documents in a digital form available in the Records Office and a computerized leave management system modified for the employees of Northern Iloilo Polytechnic State College Estancia, Iloilo. Specifically, this paper sought to design and develop the Record Management System with Document Control and evaluated its level of usability and performance as perceived by the target users. A total of 165 respondents of the said institution participated in the study which includes the five experts for School Year 2016-2017. The data were gathered through a survey questionnaire that primarily solicited feedbacks from respondents using the International Standard Organization/International Electrotechnical Commission 9126 Model. Descriptive research design was employed to describe the observations of the respondents based on the set objectives. The results revealed that the functionality of the system product, the level of usability as well as its performance were all interpreted as "Very Good". This significant result implied that the respondents were impressed by the system features of the developed system in a convenient way.

KEYWORDS: Record Management, Document Control, Leave Management System, E-records, Rapid Application Development Model

I. INTRODUCTION

In this day of rapidly advancing technology and abundant information, it was manifested that one of the essential pieces in the regular function of an organization both private and public was the record that it generates and receives daily since it supports business activity associated with the workflow and provides a basis for efficient service delivery. The landscape of record management has changed with the increasing demand of information and communication technologies (ICTs) into the daily operations of the organizations and resulted in a new version of records which was digitally born records along with the paper origin records.

Record Office was one of the organizational units in Northern Iloilo Polytechnic State College (NIPSC). It served as the official repository of all records essential to the College. One of its Mission was to provide timely frontline services to its clientele. It complements the NIPSC's thrust to continue the commitment to excellence in teaching and learning experience in its campuses. At present, the office used a manual system for the processing of incoming and outgoing communication of the Institution and application for leave of the employees as well as in updating of their (201) personal files.

One of the activities that cause delayed in the management of employees' records was the volume stacks of papers that were kept by the records officer. In numerous instances, the records officer, upon request of the employee's concern, finds difficulty in retrieving certain documents because she had to turn one page after the other just to locate these documents such as human resource records of the employee. As such, in the recording of leave credits, she had to manually write down the number of days as per service credits, and subsequently do the computations manually using her calculator. When multiple employees came to visit at her office to ask for their remaining leave credits, there was a perceived inefficiency of the records officer by the employees because the former cannot immediately provide the requested information as she had to do the manual computations.

In [1], they developed the Human Resource Management System which is an information system that aims to reduce the effort of the administrator to keep the daily events such as attendance, projects, works, and appointments. It also deals with the process of identifying the employees, recording their attendance hourly and calculating their effective payable hours or days. It also maintains the records of each and every employee and their time spend in to company, which can be used for performance appraisal. Based on that transfer, removal, promotion can be done.

In [2], he conducted a study entitled SeRIA Staff Movements Management System (SSMMS). SSMMS is a system used to record the present of staffs to work and staffs leaves application assisted by the System Development Life Cycle (SDLC) methodology.

Through this system, it allow staff to record daily attendance, apply for leave, viewing of profile as well as monitor their leave application status, while the coordinator could see staff attendance reports and generate attendance reports. The administrator manages the application; he may accept or reject the staff leave application. Additionally, SSMMS reduce time and management cost. The implementation of this system minimizes the usage of conventional system and maximizes the usage of computers in the organization. In conclusion, it is hope that this system could improve the management in the organization.

In [3], he conducted a study to find out the extent of compliance of the 14 out of 15 selected barangays in Quezon City to the relevant laws, rules, and regulations on archives and records management. Distribution of survey questionnaires and follow-up interviews were done to gather data. Findings revealed that there is a great and urgent need for the barangays in Quezon City to upgrade and standardize their archives and records management systems in accordance with the Republic Acts to better serve their constituencies.

It is in this context that this paper sought to design and develop a web-based management information system that used the advancement of ICTs in records management and leave management and shall be known as Record Management System with Document Control. It further aimed to determine the level of usability of the proposed features as perceived by the user groups and evaluate its performance in terms of reliability and time efficiency of the information as viewed by its target users.

II. METHODOLOGY

2.1 Software Development Life Cycle Model

The study employed the Rapid Application Development (RAD) model as the software development life cycle for the software development activities. The RAD model makes use of prototypes that serve as a working model that form an immediate part of the end product [4]. It depends upon prototyping and iterative development. The process of writing the software itself involves the planning required for developing the product. A prototype is a working model which is functionally equal to a component of the product [5]. The prototype is handed to the users for testing and to provide comments; which are the reanalyzed and redesigned, and a second prototype is developed. The process continues in a cycle until the users and developers agree to a final system [6].

The RAD model consisted of four phases namely requirements planning phase, user design phase, rapid construction phase and cutover phase [7]. At each phase, the researcher performs specific activities leading to the phase's deliverable. Figure 1 shows the RAD model.

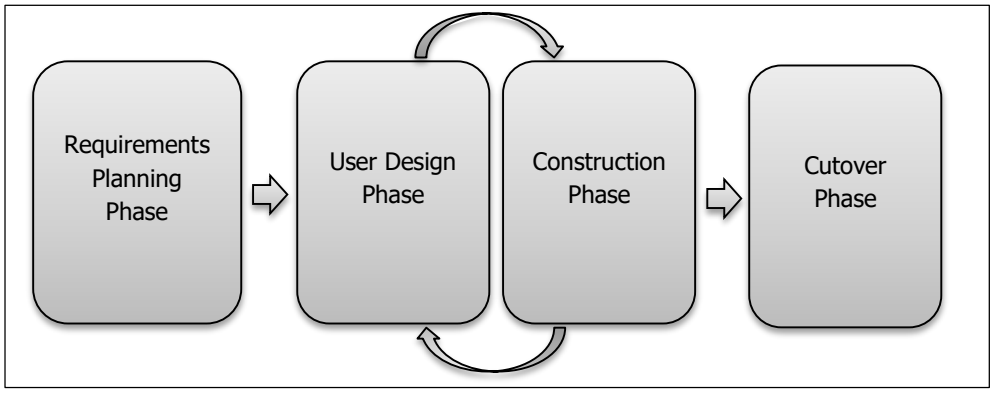

Figure 1.The Rapid Application Development Model.

2.2 Application Architecture Model

The application architectural model describes the proposed layouts for the core functions. The layout represented the hierarchy of key logical components comprising the proposed system. Logical architecture recognizes the software components needed to implement a solution, showing the interrelationships among the components and distributes among logical tiers. Tiers were concerned with the physical distribution of components and functionality on servers, computers, networks, and remote locations. In this study, the N-tier architecture was employed. In client–server architecture, the functionality of the system is organized into services, with each service delivered from a separate server. Clients are users of these services and access servers to make use of them [8].It consists of four layers namely the presentation layer, the application and logic layers also known as the business layer, the data manipulation layer, and the database layer.

The presentation or graphical user interface (GUI) layer component implemented the functionalities required to allow the user to interact with the system. The server version of Record Management System with Document Control provides the presentation

layer that was executed at the web browser by way of local hosting. The business layer implemented the primary functionality of the system and encapsulated the relevant business logic. The data manipulation layer implemented the processes involving the management of records used by the proposed system. This was executed using the My Structured Query Language (MySQL) database server which handles the database, tables and records. Figure 2 shows the application architecture model of the system.

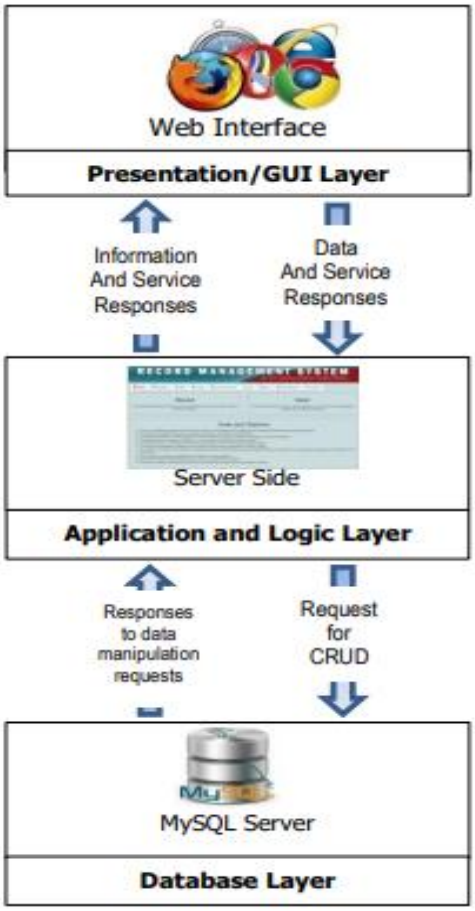

Figure 2. The Application Architectural Design of the System.

2.3 Physical Network Topology

The physical network topology visualized the communication schemes of physical networks and its arrangement. The physical network topology illustrates the placement of the components in the network. It showed the configuration of cables, computers, and other devices.

Since the system was a web-based system. It can run on one or more computer in a network and can be accessed via a web browser using an assigned Internet Protocol (IP) Address of the server where the program and manipulation of data were stored. Figure 3 showed the physical network topology of the system.

Figure 3. Physical Network Topology of the System.

2.4 System Prototype

The construction of the system prototype was based on standard web development techniques for efficient user interface design. Font colors, styles and sizes as well as background and even whitespaces had been configured while taking into considerations of the users' profiles. The system prototype consisted of multiple files were written using PHP Hypertext Preprocessor (PHP) scripting language.

The main interface for the system operators in the processing of incoming and outgoing communication of the institution as well as for the application and monitoring of leave credits, and the recording of personal (201) files of its employees in a digital format. Figure 4 shows the Record Management System with Document Control main page.

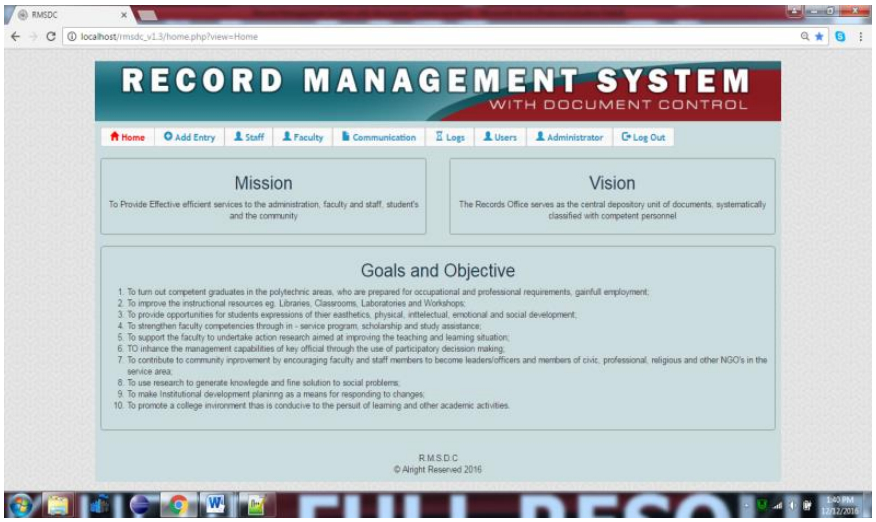

Figure 4.The Record Management System with Document Control Main Interface.

III. RESULTS AND DISCUSSION

3.1 Functionality of the System Product

The table below shows the result of the respondent's feedback on the functionality of the system product in terms of functional appropriateness, functional correctness, and functional completeness. On the extent of designing the system product to end-users, the functional appropriateness (M= 4.81), functional correctness (M=4.71) and functional completeness (M=4.75) were described as "Very Good".

These findings simply suggested that with the system product when implemented, the delivery of incoming and outgoing communication, the application and monitoring of leave credits, as well as the recording and retrieving of personal (201) files to target end-users, had a high level of suitability. The recording and retrieving of records in electronic format were provided in a fast and efficient way. As needed by the users, the system product should enhance the day to day transactions being provided to the clienteles. This requirement was employed in a sequence of handy components. The NIPSC record officer also stated that through this system, her works became organized and it caters her daily activities. Table 1 shows the results.

Table 1. Respondents' Feedbacks on the Functionality of the System Product.

Implementation Indicators	Mean	Verbal Interpretation
a. functional appropriateness	4.81	Very Good
b. functional correctness	4.71	Very Good
c. functional completeness	4.75	Very Good

3.2 Level of Usability

Usability features is the ability of the system product to be understood, learned, operated, accessed and provides visual appearance, under specified settings of the system. The level of usability of the system was evaluated in terms of understandability, learnability, operability, accessibility, and user interface aesthetics. The respondents' feedbacks for the level of usability in terms of understandability (M=4.75), learnability (M=4.79), operability (M=4.70), accessibility (M=4.69), and user interface aesthetics (M=4.78) were all interpreted as "Very Good". Findings revealed that the system product, when utilized, possessed a high level of usability wherein end-users were able to easily understand due to its simple design and features. Table 2 shows the result.

Table 2. Respondents' Feedbacks on the Usability of the System Product.

Implementation Indicators	Mean	Verbal Interpretation
a. understandability	4.75	Very Good
b. learnability	4.79	Very Good
c. operability	4.70	Very Good
d. accessibility	4.69	Very Good
e. user interface aesthetics	4.78	Very Good

3.3 Performance Evaluation of the System Product

Performance is the capability of the system product to provide total effectiveness in relation to the utilization of resources. The performance of the system was evaluated in terms of reliability and efficiency. The results showed that the performance of the system product in terms of reliability (M=4.76) and time efficiency (M=4.65) were all interpreted as "Very Good".

Findings revealed that the system product upon evaluation was able to manage records in the day to day transactions of the Record office. The respondents believed that the throughput procedure and response time were outstanding. The system product was able to deliver actual results and capable of assisting in the day to day transactions of the office. The most important transactions such as receiving and releasing of incoming and outgoing communication, leave credits monitoring of NIPSC employees and updating of personnel HR records primarily catered the daily activities of Record Office. Table 3 shows the performance evaluation of the system product.

Table 3. The Performance Evaluation of the System Product.

Implementation Indicators	Mean	Verbal Interpretation
a. reliability	4.76	Very Good
b. time efficiency	4.65	Very Good

IV. CONCLUSION

In view of the results of the study, the following conclusions were arrived:

The Record Management System with Document Control was able to provide receiving and releasing of incoming and outgoing communication in digital format, the application and monitoring of leave credits of the employees as well as updating of their 201 files.

The Record Management System with Document Control was able to deliver a high level of usability due to its simple design and features that is easy to learn, access and operate.

The performance of the Record Management System with Document Control in terms of reliability and time efficiency of the information provided to clienteles was able to meet the expectation of Record Officer and the Faculty and Staff of NIPSC Estancia, Iloilo. The receiving of incoming and outgoing communication was made simple and convenient for the Record Officer. The information with regards to their leave credits as well as in updating of their HR records was made readily and quickly available for use by the person in need which was a good practice in an organization.

V. RECOMMENDATIONS

From the findings and conclusions of the study, the following recommendations were strongly suggested:

1. Since automation and computerization were adapted and used in most offices and schools, it may be suggested that the Record Management System be implemented and used by Northern Iloilo Polytechnic State College to help the Record Officer in managing records of employees and receiving and releasing of communications both incoming and outgoing.
2. Since NIPSC is composed of seven campuses, it is highly recommended that the Institution replicate the system for better practice of the organization.
3. The school may continue to update the system which may help to maximize its potential and improve its functionalities, usability, and efficiency.
4. A similar study should be made using Short Messaging Systems (SMS) for notifications of the following: approved leave and remaining leave credits, receiving of human resource records of each personnel, and acknowledging of documents both the incoming and outgoing.

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