



Guidance and Counseling Record Management System

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ABSTRACT

The developed Record Management System for Guidance and Counseling Center of the Nueva Ecija University of Science and Technology aimed to provide software application that will manage the record of student and provides fast and easy access of personal information of students. The functions focused in adding and updating students' information/profile by using the application. The user can produce a printed copy of the record of student.

The development of the Record Management System underwent the phases for System Development Life Cycle (SDLC) such as: Stage 1 – Planning; Stage 2 – Analysis; Stage 3 – Design; Stage 4 – Coding; Stage 5 – Testing; Stage 6- Implementation; and Stage 7 – Maintenance.

The system took three months to be developed was accomplished using Visual Basic 2017 programming language and Microsoft SQL Server 2017 database. Record Management System has been strongly accepted by the respondents based on their assessment on these five criteria: functionality, usability, efficiency, portability, and security. The suggestions given by the group of respondents may be considered for future enhancement of the system.

Key words: Guidance and Counseling, Record Management System, SDLC

1. INTRODUCTION

The Guidance and Counseling Office of the Nueva Ecija University of Science and Technology help the students in discussing their personal problems to find solutions. The students undertake in counseling programs to improve their attitude, personality, and their social and psychological awareness.

The Counseling Office have been using the manual processing of collecting individual inventory of students for many years now. With the increased number of students enrolled in the university, the guidance and counseling office

must perform more efforts to maintain accurate and reliable data. The guidance and counseling office gathers students' data/information at the beginning of each semester, resulting in a large number of files. They also have a difficult time retrieving student information for academic purposes.

The concept cited above prompted the researcher to conduct this study to provide the Guidance and Counseling Office of the Nueva Ecija University of Science and Technology a software application that will manage the record of students and provides fast and easy access of personal information of students. It saves big spaces for offices from files of paper records. It also makes student record administration much easier, more efficient, less time consuming, and more reliable without losing quality.

This system helps the counselor to find the information of the students in the shortest time possible. The user can easily input data to the student's profile thus will lessen the time of work be consumed. In addition, if the new technology is implemented it can be used by the university to be technologically competitive to other educational institutions.

Several studies were conducted about the development of Guidance Counseling System. Authors in [1] develop a Decision Support System for Guidance Counseling which integrates data and report of guidance and counseling office of the university through a web-based application, researcher in [2] develop a Knowledge Management System that provide assistance to school counselors in managing counseling processes, while [3] develop a Guidance and Counseling System that encapsulates processing of the Students Information Profiles, Routine Interviews, Exit Interviews and Graduate Tracking and [4] design a Web-based Information System Counseling Guide and data management.

2. OBJECTIVES

This study focused on the development and evaluation of a "Record Management System for Guidance and Counseling Center of the Nueva Ecija University of Science and Technology.

Specifically, this study dealt with the following concerns:

1. Development and Description of Records Management System based on the following stages of system development:
 - 1.1 Planning.
 - 1.2 Analysis.
 - 1.3 Design.
 - 1.4 Coding.
 - 1.5 Testing.
 - 1.6 Implementation; and
 - 1.7 Maintenance.
2. Assessment of respondents on the developed Record Management System based on the following criteria:
 - 2.1 Functionality.
 - 2.2 Usability.
 - 2.3 Portability.
 - 2.4 Efficiency; and
 - 2.5 Security.

3. METHODOLOGY

3.1 Research Design

The developmental method of research was used in the study. This method involves analysis, design, development, and evaluation phase [5]. The most prevalent sorts of developmental research are those in which the product development procedures are investigated and reported, and the completed product is reviewed to ensure its success.

The study was developmental in nature as it also adopted these stages: planning, analysis, design, coding, testing, implementation, and maintenance. The program was evaluated in terms of the following criteria: functionality, usability, portability, efficiency, and security.

3.2 Analysis of Data

The data gathered in the assessment stage was analyzed using weighted mean.

4. RESULTS AND DISCUSSION

1. Development and Description of the Record Management System for the Guidance and Counseling Office

This project is developed using System Development Life Cycle (SDLC), which consist of seven phases of development. The lay-out of the project and the scope of operation are discussed below:

Stage 1 – Planning

This stage covered the period from the January 3 to January 7, 2018, with the following activities accomplished:

1.1 The researcher conducted interviews with Guidance and Counselor of the different Colleges of Nueva Ecija University of Science and Technology to understand the

status of the Guidance and Counseling Office and its proficiency for technological change.

1.2 The data given by the Guidance and Counselors were carefully analyzed, organized, and categorized in preparation for the presentation design.

1.3 The researchers enlisted a set of categorical components as basis for content presentation. Through several research, supplements were constantly being added to the original outline until a final outline had been completed.

1.4 Aside from the components for content presentation, the schedule of activities was also plotted.

Project’s Gantt chart illustrates the seven stages of system of the project development with respect to time, i.e., from the first week of January 2018 to the last week of March 2018.

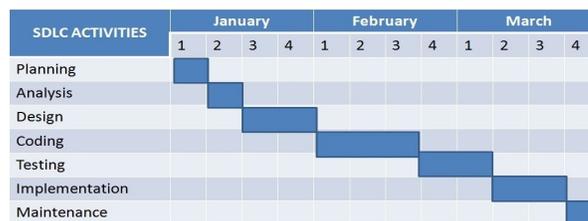


Figure 1: Record Management System Gantt Chart

Stage 2 – Analysis

This stage was done from January 08 to January 15, 2018. The following activities were accomplished:

2.1. The organized information from the Guidance and Counseling Office was carefully reviewed to see whether a set of information needs to be included as content for the management system or whether a set of information was updated and pertinent.

2.2. The categorical components constructed from Stage 1 were analytically compared with some existing contexts seen on the related studies to possibly improve the components.

2.3. Categories of a set of information with specific components were done to verify the completeness and relevance of the information given by the Guidance Counselor. This also helped the researcher determine if there were other missing files needed for the record management system. The files of information that were found lacking were to be provided by the Guidance Counselor.

Stage 3 – Design

This stage was completed within two weeks from January 16 to January 31, 2018. The following activities were accomplished:

3.1. The researcher developed precise framework of content presentation based on the components already envisioned. The researcher also determined the types of file formats used to present the information.

3.2. Forms to be integrated were designed and created by the Guidance Counselor. The form from the Guidance Counselor was converted into suitable and more

desirable for the record management using Visual Basic 2017. Figure 2 shows the Visual Basic 2017 Integrated Development Environment, in this form a student will be able to view his/her profile and edit information such as personal information, family background, educational background, Academic Performance and self-evaluation.

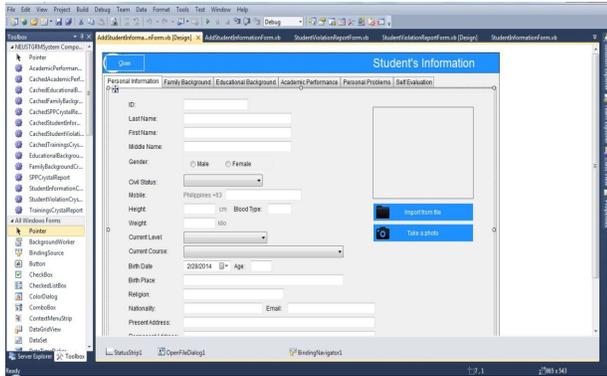


Figure 2: Visual Basic 2017 Integrated Development Environment

3.3 The data flow diagram was drawn to show the flow of data within the system. This is the diagram used by the researcher to visualize the flow of data as provided by different external entities.

Figure 3 illustrates the data flow diagram for the developed Record Management System. The user of the system will enter his/her username and password. The system will verify if the username and password combination are correct and stored in the database. If yes, the process will go to adding/editing of Student Information, if no, the process will go to the inputting of username and password. The user can manage Student’s Information such as personal information, family background, educational background, Academic Performance, and self-evaluation if he/she has entered the correct username and password combination. The user will be able to search/view the student information.

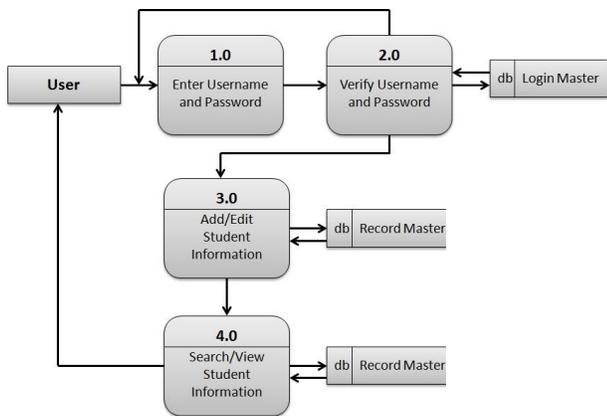


Figure 3: Record Management System Data Flow Diagram

3.4 The entity-relationship diagram was drawn to show the overall concept of the system. Figure 4 illustrates the entity relationship diagram for the developed record management system for Guidance and Counseling Office of Nueva Ecija University of Science and Technology.

Stage 4 – Coding

Stage 4 was accomplished within 21 days, from February 1 to February 21, 2014. The software coding consists of: application program to create the computerized system and the database that will hold all the data of the system.

Application Program. The application program is developed with Microsoft Visual Basic 2010 programming language. The advantages of Microsoft Visual basic 2010 programming language are its robustness, easy to program, has an excellent database connectivity, runs on the two most common operating system platforms (Windows and Unix) and it has a larger user community that provides online support.

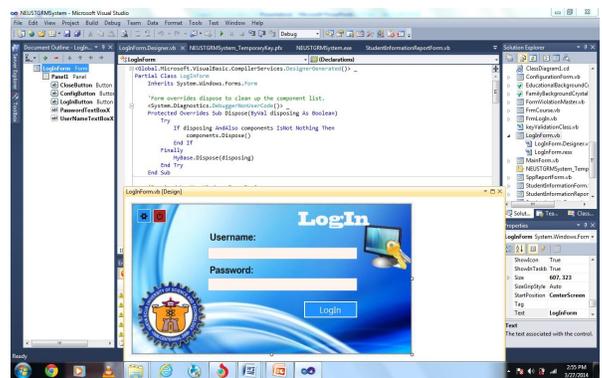


Figure 5: Record Management System Software Coding Environment

Figure 5 shows the snapshot of the interface of the system and the actual coding environment of Microsoft Visual Basic 2010 where the system has been developed. Figure 5 shows the log in form, this will enable the user to log in using their respective username and password.

Database. The database consists of tables that stores records implemented in Microsoft SQL Server database. However, this can be migrated to any other relational database of choice. SQL Server is fast and easy; it can store a very large record and requires little configuration.

Stage 5 – Testing

This stage was completed within two weeks from February 22, 2018, to March 07, 2018. The objective of this stage is to evaluate the capability of a program or system and determine that it meets its required results. The developed record management system was tested and evaluate based on the following criteria: functionality, usability, efficiency, portability, and security.

Each module of the developed system were checked, making sure that all processes are complete. The transactions and processes should perform according to the requirements and should come up with the desired output. Also, during the testing phase some of the codes were already corrected.

Stage 6 – Implementation

Stage 6 was conducted for 14 days starting from March 8, 2018, to March 21, 2018. The researcher did the following activities:

1. In this stage of development, the Record Management System was completed, checked, and validated.
2. Software assessment evaluation was done by the different College Guidance Counselor of Nueva Ecija University of Science and Technology and IT experts to determine if further enhancement of the system could be made based on their evaluation.

Stage 7 – Maintenance

Stage 7 was conducted for 7 days starting from March 22, 2018, to March 28, 2018. The researcher did the following activities:

1. Errors that became visible in the actual implementation were corrected.
2. Updated and enhanced the developed system to satisfy the needs of the users.

2. Assessment of the Respondents on the Developed Record Management System for Guidance and Counseling Center of the Nueva Ecija University of Science and Technology.

The assessment conducted was based on the record management characteristics, functionality, usability, efficiency, portability, and security.

2.1 Functionality

Table 1 shows the result of the assessment made by the two groups of respondents on the Developed Record Management System based on its functionality. Table 1 confirms that the developed system is highly functional based on the point of view of the respondents, because an overall weighted mean of **4.35** interpreted as “**Strongly Agree**” was computed.

Table 1: Assessment of the Respondents on Functionality

STATEMENT	User of the System		IT Practitioner		Overall	
	WM	VD	WM	VD	WM	VD
The system collect, organizes, and categorizes records of	4.50	SA	4.20	SA	4.35	SA

students.						
The system facilitates the preservation, retrieval, use, and disposition of records.	4.40	SA	4.10	SA	4.25	SA
The system provides or enables the ability to retrieve records relevant to a query.	4.30	SA	4.30	SA	4.30	SA
The system provides printing of records of students.	4.50	SA	4.50	SA	4.50	SA
AVERAGE	4.43	SA	4.28	SA	4.35	SA

Based on the assessment made, all the four items presented in the functionality category got “**Strongly Agree**” responses. These are the following interpretation for functionality: The system collect, organizes, and categorizes records of students (**WM = 4.35**); The system facilitates the preservation, retrieval, use, and disposition of records (**WM = 4.25**); The system provides or enables the ability to retrieve records relevant to a query (**WM = 4.30**); The system provides printing of records of students (**WM = 4.5**). The “**Strongly Agree**” responses of the two sets of respondents confirms that the developed system is found functional in the sense that it provides the recommended functionality for the system.

2.2 Usability

Table 2 shows the result of the assessment made by the two groups of respondents on the Developed Record Management System based on its usability.

Table 2 shows that an overall weighted mean of **4.33** interpreted as “**Strongly Agree**” was computed for the assessment of the two groups of respondents. This means that the two groups of respondents strongly agreed on the usability of the Record Management System.

Based on their assessment, all these four items got strongly agree responses: The system provides appropriateness of option in the user interface (**WM = 4.25**); The system design, screen layout and colors are appealing (**WM = 4.30**); There is less effort required to learn how to use the system (**WM = 4.45**); The system is easily operated by a given user in each environment (**WM = 4.30**). These strongly agree responses of the two groups of respondents signify that the Developed Record Management System is found usable by them in the sense that the system provides appropriateness of option in the user interface so that the new and old users of the system can easily learn and operates the system.

Table 2: Assessment of the Respondents on Usability

STATEMENT	User of the System		IT Practitioner		Overall	
	WM	VD	WM	VD	WM	VD
The system provides appropriateness of option in the user interface.	4.20	SA	4.30	SA	4.25	SA
The system design, screen layout and colors are appealing.	4.30	SA	4.30	SA	4.30	SA
There is less effort required to learn how to use the system.	4.50	SA	4.40	SA	4.45	SA
The system is easily operated by a given user in each environment.	4.30	SA	4.30	SA	4.30	SA
AVERAGE	4.33	SA	4.33	SA	4.33	SA

2.3 Efficiency

Table 3 shows the assessment of the two groups of respondents on Developed Record Management System based on its efficiency.

Table 3: Assessment of the Respondents on Efficiency

STATEMENT	User of the System		IT Practitioner		Overall	
	WM	VD	WM	VD	WM	VD
The system permits retrieval of both individual records and files or other groupings of related records.	4.20	SA	4.30	SA	4.25	SA
The system provides complete and accurate information of students.	4.50	SA	4.40	SA	4.45	SA
The system provides faster response and processing of information needed.	4.20	SA	4.20	SA	4.20	SA
The system is capable to provide the administrator to access fast and unfailling information.	4.20	SA	4.30	SA	4.25	SA
AVERAGE	4.28	SA	4.30	SA	4.29	SA

Table 3 shows that an overall weighted mean of **4.29** is interpreted as **“Strongly Agree”** was computed for the assessment of the two groups of respondents. This means that the two groups of respondents strongly agreed on the efficiency of Developed Record Management System.

Based on the assessment of the two groups of respondents, all these four items got strongly agree responses: The system permit retrieval of both individual records and files or other groupings of related records(**WM = 4.25**); The system provides complete and accurate information of students(**WM = 4.45**); The system provides faster response and processing of information needed (**WM = 4.20**); The system is capable to provide the administrator to access fast and unfailling information (**WM = 4.25**).The strongly agree responses of the two groups of respondents can be interpreted to mean that they find the Record Management System efficient because it allows them to retrieve individual records and files, as well as other groups of related records, and provides faster response and processing of information.

2.4 Portability

Table 4 shows the assessment of the two groups of respondents on the Developed Record Management System based on its Portability.

Table 4: Assessment of the Respondents on Portability

STATEMENT	User of the System		IT Practitioner		Overall	
	WM	VD	WM	VD	WM	VD
Backups are provided by the system to protect against data loss due to equipment failure or human mistake.	4.20	SA	4.30	SA	4.25	SA
The system can keep the records in a usable format for their required retention period and until their permitted disposal date.	4.20	SA	4.30	SA	4.25	SA
Through conversion or migration, the system maintains a relationship between records and associated metadata.	4.30	SA	4.20	SA	4.25	SA
The system ensures that data is not lost due to technological changes or degradation	4.25	SA	4.30	SA	4.28	SA
AVERAGE	4.24	SA	4.28	SA	4.26	SA

Table 4 shows that an overall weighted mean of **4.26** interpreted as **“Strongly Agree”** was computed for the assessment of the two groups of respondents. This means that the two sets of respondents strongly agreed on the portability of the Record Management System.

Based on the assessment of the two groups of respondents all these four items got strongly agree responses: Backups are provided by the system to protect against data loss due to equipment failure or human mistake (**WM = 4.30**); The system can keep the records in a usable format for their required retention period and until their permitted disposal date. (**WM = 4.25**); Through conversion or migration, the system maintains a relationship between records and associated metadata. (**WM = 4.25**); The system ensures that data is not lost due to technological changes or degradation. (**WM = 4.30**). This strongly agree responses of the two groups of respondents indicates that the Developed Record Management System is found portable in the sense that the system can retain the records in a usable format for their required retention period and until their authorized disposition date, and it provides backup to protect against data loss due to equipment failures or human error.

2.5 Security

Table 5 indicates how the two sets of respondents rated the efficiency of the Developed Record Management System.

Table 5: Assessment of the Respondents on Security

STATEMENT	User of the System		IT Practitioner		Overall	
	WM	VD	WM	VD	WM	VD
The system allows only authorized personnel access to the records in the system.	4.25	SA	4.30	SA	4.28	SA
The system allows only authorized personnel to perform administrative functions such as assigning access rights	4.30	SA	4.40	SA	4.35	SA
The system is capable to minimize the risk of unauthorized alteration or erasure of the records	4.20	SA	4.20	SA	4.20	SA
The system is capable to provide an appropriate level of security for the records it manages	4.25	SA	4.30	SA	4.28	SA
AVERAGE	4.25	SA	4.30	SA	4.28	SA

Table 5 shows that an overall weighted mean of **4.28** is interpreted as **“Strongly Agree”** was computed for the assessment of the two groups of respondents. This means that the two groups of respondents strongly agreed on the security of Developed Record Management System

Based on the assessment of the two groups of respondents, all these four items got strongly agree responses: The system allows only authorized personnel access to the records in the system (**WM = 4.28**); The system allows only authorized personnel to perform administrative functions such as assigning access rights (**WM = 4.35**); The system is capable to minimize the risk of unauthorized alteration or erasure of the records (**WM = 4.20**); The system is capable to provide an appropriate level of security for the records its manages (**WM = 4.28**). The strongly agree responses of the two sets of respondents can be interpreted to mean that the Developed Record Management System is found secured by them since the system is capable to provide an appropriate level of security for the records its manages, and capable to minimize the risk of unauthorized alteration or erasure of the records.

5. CONCLUSIONS

The following are the conclusions drawn from the findings of the study.

1. The development of the Record Management System underwent the phases for System Development Life Cycle (SDLC) such as: Stage 1 – Planning; Stage 2 – Analysis; Stage 3 – Design; Stage 4 – Coding; Stage 5 – Testing; Stage 6- Implementation; and Stage 7 – Maintenance.
2. The system took three months to be developed was accomplished using Visual Basic 2017 programming language and Microsoft SQL Server 2017 database.
3. Record Management System has been strongly accepted by the respondents based on their assessment on these five criteria: functionality, usability, efficiency, portability, and security.
4. The suggestions given by the group of respondents may be considered for future enhancement of the system.

6. RECOMMENDATIONS

Based on the findings drawn, the following recommendations were presented:

1. A full implementation of Record Management System must be done for every Guidance and Counseling offices in each different campuses and colleges of the University.
2. Training for the users of the Record Management System must be done, for the correct and reliable encoding of information on the database system.
3. Provide policies and guidelines that give emphasis on the usage, application, and benefits of the system

especially not just only to the students but also to the Guidance Counselor and Coordinators.

4. Colleges, universities and other educational institutions should also consider using Record Management System for Guidance and Counseling Office.

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