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E- Retention: Web-Based Applying Deterministic Approach of HEI Board Programs

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ABSTRACT

The system E-Retention Portal was designed with the primary purpose of helping every student of board programs of MinSCAT Bongabong Campus to check the result of their academic grades every end of the semester. The design and implementation of the online e-retention portal assist the students in managing their academic status that can be viewed on their mobile phones or gadgets. This system would also help the instructor lessen the time to make data by efficiently inputting every student's grades and sending them to the registrar. Rapid application development (RAD) was utilized to develop the system, HTML as the programing language, and MySQL as the database Information concerning this work was obtained through a questionnaire, oral interview, and observation. The system was evaluated by forty (40) respondents from MinSCAT Bongabong Campus's different courses. The researchers used an ISO 25010 type of questionnaire that assessed the system's acceptability in terms of functionality, reliability, usability. Efficiency, maintainability. The system's result with the average3.83 illustrated as very good as the respondents agree to the system's criteria in the evaluation form. The E-Retention Portal can be designed to switch from manual disseminating of grades to the students' online process and storing grades. The system provides secured and reliable record management of every Mindoro State College of Agriculture and Technology student. The system is user-friendly, efficient, usable, and accurate. The students access the website anytime, anywhere to view and inquire about their grades. The system is upgraded into automatic computation, allowing the instructor to compute the grades to the design directly and automatically give remarks.

INTRODUCTION

When we speak of education, the first thing that springs to mind is the acquisition of knowledge. Education may help people get a better perspective on life. The key to success is education, and it is one of the essential things you can do for yourself. One of the most crucial aspects of people's life. It is the process of making learning, or the acquisition of information, skills, attitudes, beliefs, and habits, easier. Students are sent to school in order to get a better level of education from higher educational institutions. There are many schools and institutions to choose from. The Philippines offer different degree programs via Higher Education Institutions (HEI). In the Philippines, several institutions offer a boarding program. MinSCAT (Mindoro State Collge of Agriculture and Technology) is the province of Oriental Mindoro's sole state college, having three campuses: Main Campus, Calapan Campus, and Bongabong Campus. According to the mins' student handbook, a student participating in a boarding program should maintain a general weighted average (GWA) of 2.25. If a student is in a non-board program, he or she must maintain a general weighted average of at least 2.50. A student who fails a course is permitted to retake the subject. The academic burden, on the other hand, should be reduced. Furthermore, if a student does not get the necessary grade for the program, the student is asked to transfer to another program. A student is eligible to return if he or she has ultimately achieved the grade needed in that particular program. Two (2) grades are given during a school term: midterm and final grades. The degree must either be passed (3.0) or failed (1.0). (5.0). The college is presently disseminating student grades through a manual method. The manual retrieval and release of records take a lengthy time. In the manual procedure, securing and organizing records is also a challenge. Students should be able to access the system using their ID number and password from anywhere at any time. As a result, the E-Retention Portal was created to assist students in looking up their marks online. Students may use their PC or mobile phone to check and see their grades. This research benefits students by giving them an easy method to check their grades whether they are still permitted to continue with the program. This research should assist students in determining whether they have passed or failed a program and the programs available to them if they have failed the program. This research aids the registrar in processing grades and improving the existing system so that grades can be distributed quickly and easily. This research aims to enhance the manual submission of grades to the MinSCAT Bongabong Campus registrar's office and provide a student portal for seeing grades. This research aims to convert the manual process of submitting instructor grades to the college registrar into an online web application, provide computerized record-keeping of student grades through E-Retention Portal, and apply and implement the College's retention policy through the website E-Retention Portal, which is designed for MinSCAT Bongabong Campus. The system decides whether or not the learner is successful. Using an online web-based application allows students to view their

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previous grades from first to the fourth year, whenever and wherever they go. When students fail the general weighted average (GWA) of 2.25, they must transfer to any program they desire. If students cannot comply with topics and fail to maintain 2.25 grades in board programs, the system also suggests alternative courses not in board programs, such as BSIT, BSEntrep, BSHTM, BSHTM, and BSPolsci. On the other hand, students cannot modify their grades; they can only view their GWA. The system supports only MinSCAT Bongabong

LITERATURE REVIEW

This chapter provides an overview of knowledge and information exchange. A summary of the study's significance to the existing literature was provided. This chapter's data was collected from various sources, including professional publications, books, and many thesis projects. They are all connected to the research and contribute to it somehow. The process of guaranteeing a student's academic success or graduation is known as retention. Retention methods are used to retain an employee's talent. A GWA of 2.25 is required for students enrolled in a degree program that involves board examinations.

The company's efficiency and manageability would suffer due to high staff turnover. This research examines how retention tactics affect India's IT sector (C. Sargent *et al.* 2011). According to the results, the core of instruction is the most significant factor in student retention. (N. Marasigan, 2018). Understudy learning outcomes and maintenance are given more weight in advanced education, and business majors' dissatisfaction rates in accounting and watchman courses are being examined. This research shows that using a learning innovation, ultra-short online recordings, to address three frequent reasons for poor performance, such as hazardous classroom conditions, low fitness, and low inspiration, had good outcomes. (S. Lee *et al.* 2014). Explain how pharmacy schools and colleges in the United States use academic progression and retention methods. Student handbooks on the websites of 122 colleges and schools of pharmacy were reviewed between February and May 2012. Data was supplied by 98 of the programs (or 80 percent) (Alejandria, 2016). A web-based application system is a kind of software that a user may access through a web browser. (Bharamagoudar *et al.* 2013).

Furthermore, a web portal is defined as a first step in connecting to the internet through the internet's worldwide web (R. Pacio, 2013). Furthermore, the Mobile web-based student integrated system was created to assist students in reviewing each student's results and monitoring their academic standing through mobile phones (O. Llantos, 2015). The Student Grade Monitoring System, on the other hand, is a mobile application for San Beda College Alabang parents that may be built using an Android application that can operate on a variety of Android devices such as smartphones and tablets. (M. Thompson, & K. Beunguk, 2012). The enlistment center, recorder's staff, seven instructors, and 56 IT use vender studies provided the information needed for the test. A narrative inquiry coupled with methods and procedures for making decisions. (R. Ritchey *et al.* 2011). This article, on the other hand, shows a flexible web interface for e-learning in advanced education. In the instruction process of access to all essential data, assets, and applications. It can offer a sim in the instruction processible interface for maintaining student information and the student and management System (SIMS). Educational institutions or colleges will use it will use Hitler's records more simply. The development and maintenance of correct, up-to-date information about a student's academic career is essential within the university and colleges. The Online Grading System is a computerized grading system. It enables students to access content online at any time and from any location.

The Android-Based Class Record System also focuses on achieving mobility while supervising and verifying understudy class records. Its primary purpose is to provide a consolidated and verified record of understudy data, assessment results, and attendances stored on Android-based mobile phones. The Android Application for Student Activity Register is made up of various frameworks, for example, a participation framework, a mark passage framework for keeping track of and updating the imprints taken by students, and an auto-count framework for calculating the aggregate participation, inside imprints, normal evaluation point, and normally combined evaluation point, and a reportage framework for creating reports of the The understudies were updated on the assessment, and the experts devised a strategy to create a database that would be accessible to both the school's staff and the understudies.

The University of Misamis has developed an electronic framework known as e-Grade Sheet, which combines or coordinates the electronic evaluation question, online course assessment, and electronic evaluation accommodation with the understudy data structure Online Grade Inquiry System distinctive to another framework because the evaluations can be print, the instructors can present their evaluations legitimately to the administrator while those frameworks cannot. Another method to record the board and trade would be Benguet State University's Online-Student Information System, which would efficiently make ready understudy information. Invigorating, recovering, and creating understudy data would be a huge aid to the administrative workforce, educational workforce, grantors or partners, and understudies.

This study developed me. module for the Student Information System (SIS) provides workspace and mobile access through the web and SMS. SMS (Short Message Service) will be essential in the future generation. It is the transmission of brief messages via a flexible system. Furthermore, an online understudy data framework aids in administering, storing, and tracking data such as affirmation numbers, involvement records, execution

tracking, and much more. Risk analysis and mitigation techniques based on the probabilistic approach are extensively used in risk management methodologies and tools. The relevant literature and studies were examined to learn about the key characteristics and modules of the collection system and studies.

METHODOLOGY

This chapter explains the methodology used in the study, such as system design, research design, and data analysis, as a foundation for the proponents to carry out this research and data collection procedure. The E-Retention Portal's study design is a developmental method research design. The development strategy is the usual technique for creating easily adaptable and extendable programs. Furthermore, development research looks at the whole instructional design, development, and assessment process or specific process components.

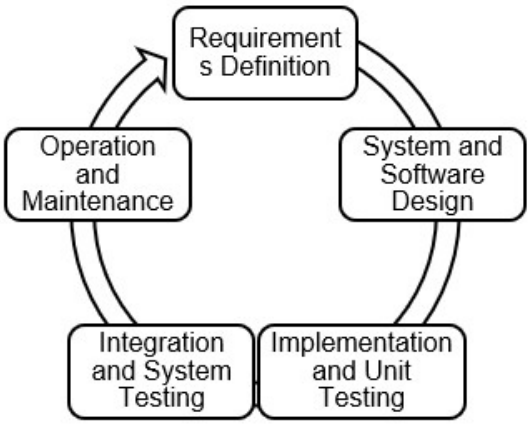

Figure 1: Scrum Agile Methodology by Nelson

Development Methods

The Scrum Agile Methodology was utilized in the study. The Scrum Agile Methodology articulates a set of values and principles to guide decisions on developing higher-quality software faster. The cycle consists of a production cycle like consulting, analyzing, planning, construction/development, system design, testing and evaluation, and implementation to improve software quality and the overall development process. Scrum Agile Methodology is used primarily for software development projects to deliver new software capability every 2-4 weeks. In general, the Scrum Agile Methodology approach to software development means giving less emphasis on planning tasks and lessening the time in the software development. Phases of Scrum Agile Methodology Requirements Definition.

The project's planning includes identifying objectives, requirements, and overall development cost, identifying whether to produce a new project or enhancing an existing project and the system's users, and conducting interviews that include gathering data. They are then defined in detail and serve as a system specification. They discussed how the instruction survey is conducted and identifying the end-user and the user requirements with the other instructor. Implementation and Unit Testing. In this phase, the coding and designing identified in the designing step were performed and applied. Unit testing involves verifying that each unit meets its specification. Integration and System Testing. In this phase, the researcher conducted alpha testing to identify all possible issues and bugs to ensure that the software specifications met Operation and Maintenance. In this phase, the researchers installed the application and put it into practical use. It involves correcting errors that were not discovered in earlier life cycle stages, improving system units' implementation, and enhancing the system's services as new requirements are found. Program testing and debugging were done simultaneously.

The researcher tested the program to check if the system conforms to the proper function, like, if the system notifies the student, produces correct computation of grades, and links it into the database. The researchers opened the website and tried if it is working or not. The system entitled E-Retention Portal will provide the faculty staff a useful and easy-to-use software that can record and monitor the grades of every student. Thirty-five respondents evaluated the developed system from the students, twenty from CPE, five from IT, ten from Teacher Education, and five from Criminology; five faculty and staff and the owner according to its functionality, user-friendliness, reliability, usability, and interactivity. In the implementation process, the researchers temporarily installed the system to help the school process the student grades and monitor their performance.

RESULTS AND DISCUSSION

Simultaneous program testing and debugging were carried out. The researcher put the software to the test to see whether it performs the required functions, such as notifying the student, producing accurate grade computations, and linking it to the database. The researchers accessed the webpage to see whether it was functional. The E-Retention Portal system will offer teachers with a valuable and easy-to-use software that will allow them to record and track each student's grades. Thirty-five students (20 from CpE, 5 from IT, 10 from Teacher Education, and five from Criminology); five professors and staff; and the owner assessed the created system on its functionality, user-friendliness, dependability, usability, and interactivity. During the implementation phase, the researchers built a temporary system to assist the school in processing student grades and monitoring their progress. The list of criteria used by respondents in assessing the system is shown in the table below.

The list of criteria used by respondents in assessing the system is shown in the table below. The Mean Range and its equivalent are shown in Table 1. Based on the Questionnaire, they are used to evaluate if the website has a positive effect on evaluators.

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Table 1: Likert Scale

Mean Range	Interpretation
4.50 - 5.00	Excellent
3.50 - 4.49	Very Good
2.50 - 3.49	Good
1.50 - 2.49	Poor
0.00 - 1.49	Fair

System Evaluation Result

Admin, Teacher, and Student all have access to the website. The average rate provided by the users is shown in the table below.

The outcome of the system's appropriateness to guarantee and measure performance is shown in table 2. The Suitability section consists of three questions that the evaluators must answer. Based on the calculated mean of the first question of suitability, the highest mean is 3.91, indicating that the software is suitable for users, and the lowest mean is 3.54, indicating that the software is satisfactory. The total mean of suitability is 3.73, indicating that the software is satisfactory.

Table 2: Suitability of the system

Suitability Question	Mean	Description
The software suits for the users.	3.91	Good
The software is stable to use every day.	3.74	Good
The software runs according to its expected function.	3.54	Good
Total	**3.73**	**Good**

Table 3: Usability of the system

Usability Question	Mean	Description
The software is easy to learn on how it works.	3.9	Good
The concept of the software is clear.	3.7	Good
The software facilitates the user's data entry.	3.91	Very Good
The software is easy to operate and control.	3.8	Good
Total	**3.82**	**Very Good**

Table 3 shows the result of evaluations of usability. It has 4 questions to answer by evaluators. The lowest mean is 3.7 which means that the concept of the software is clear. Highest mean is the "software facilitates the user's data" entry which got 3.91.

The results of the reliability and performance specifications, the likelihood of the system, including all equipment, and the system's satisfactory performance are shown in table 4. It displays the average of all questions. The computed mean of each question is 3.46, 4.50, and 3.90, indicating good descriptions.

Table 4: Reliability of the System

Reliability Question	Mean	Description
The software guides the users.	3.46	Good
The software helps the users to lighten handling the student's records.	4.51	Excellent
The software can handle heavy data.	4.50	Excellent
The software informs users concerning invalid data entry.	3.90	Very Good
Total	**3.86**	**Very Good**

Table 5: Security of the system

Security Question	Mean	Description
The software secures the stored data.	3.74	Good
The software is accessible for authorized users.	4	Very Good
The data entered in the software is private.	4	Very Good
Total	**3.91**	**Very Good**

Table 5 illustrates the system's security results and how the framework aids in protecting sensitive data. The highest mean of security is 4, indicating that the software is accessible for authorized users and that data entered in the code is private. Table 5 also shows how the software secures the stored data.

The efficiency of the system is shown in table. The greatest mean is 4.1 software reaction time, which is suitable for a very excellent description. The lowest mean is 3.6 software execution time, which is appropriate for a decent description. It is an accurate representation.

Table 6: Efficiency of the system

Efficiency Question	Mean	Description
The software's response time is appropriate.	4.1	Very Good
The software's execution time is appropriate.	3.6	Good
The resources used are appropriate.	3.9	Good
Total	**3.9**	**Good**

The lowest estimated mean of portability is 3.69, indicating that the program is simple to adapt to a different environment. The highest calculated mean of portability is 3.94, indicating it is difficult to adapt in a new environment. Table 7 includes three evaluation questions. The evaluators agreed on the created system, as shown

Table 7: Portability of the system

Portability Question	Mean	Description
The software is easy to install to another environment.	3.94	Good
The software is easy to adapt to another environment.	3.69	Good
The software is easy to use to replace to another program	3.71	Good
Total	**3.78**	**Good**

Figure 2: Summary of Evaluation Results

in the diagram. The system is Good and Very Good in E-Retention Portal, based on the average means of each category. The system provided appropriateness, use, reliability, security, efficiency, and portability to students, teachers, and administrators, which is the registrar of MinSCAT Bongabong Campus, with an overall average mean of 4.43.

CONCLUSION

The E-Retention Portal allows for a shift in the process of distributing marks from the registrar to students, from manual to online grading. It's difficult for a teacher to keep track of hundreds of records without utilizing automation. The technology ensures that student records are kept in a safe and trustworthy manner. One of the registrar's duties is to maintain the student's grades data safe for their records and purposes. The website has been designed to be user-friendly, efficient, useful, and accurate. Students may check their grades at any time and from any location by visiting the website. In order to ask about grades, students must travel directly to the registrar's office, which is a time-consuming and expensive procedure. The method has the potential to speed up the inquiry grading process.

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