**FlexiFile: Dynamic Faculty Profiling System for**

**College of Information and Computing Sciences**

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**1. INTRODUCTION**

**1.1 The Project Context**

Profile systems make it easier for educational institutions to promote and make their work available to a worldwide audience, for students to discover more about their professors and advisers, and for university administrators to track and analyze the impact of intellectual outputs from programs and grants, as well as helping the media, industry, and the general public find university specialists, among other things [1]. The current generation of information technology is altering people's thinking, lives, and learning methods, as well as having a significant impact on global development. The appearance of the Internet of Things (IoT), big data, artificial intelligence (AI), cloud computing, and mobile Internet has altered people's thinking, learning methods, modes of production, and lifestyles [2].

Dynamic Faculty Profiling System for faculty members aims to provide an easy--to-use

platform for faculty members to manage their profiles. It will enable faculty members to create and manage their profiles in real-time and make it easier for them to access relevant information to create dynamic reports on particular purpose or need about their research interests, publications, teaching experience, and other relevant information.

One of the constant backbones and significant contributors to the success of an Academic Institution is its teaching workforce. Without them, the delivery of quality education to their stakeholders would not be possible. Currently, the College of Information and Computing Sciences is ranked second in terms of student population registering a combined number of enrolled students from both BSI/T and BSIS programs gram a total of 1,107. Having this voluminous number of students requires also a bigger teaching force. Based on the conducted interview the college has a total of 27 Information Technology Education Faculty members and 10 General Education Faculty Members both from BSIS programs of Boac Campus including the Sta.Cruz Campus.

Every year, all of the college faculty members are required to update their Personal Data Sheet by the Human Resource Management and Development Office which nullifies the reliability of the existing documented faculty profile and reports. Aside from the yearly update, faculty reports for the last three years must be available for Program Accreditation and Certificate of Program Compliance evaluation as well as during ISO Audit. Since all the faculty information must be updated at all times possible the faculty members assigned to do the task find it challenging in preparing and re-updating all the needed faculty profile reports based on the needed design of the reports which are the matrix of Faculty based on Educational Attainment which composes of transcript records and diploma, and matrix of Faculty based on Appoint Status which compose of Appointment Letter. The Matrix of Faculty is based on Academic Rank, and the Matrix of Faculty is based on Teaching Assignments which composes of teaching load, and opportunity registration forms. Another is the Matrix of Faculty based on Work Experience which composes of a Certificate of Employment, a Matrix of Faculty based on Membership to Professional Organization, and a Matrix of Faculty based on Research Profile and Faculty Development Plan.

The causes of this are the faculty profile in CICS is constantly updated, leading to frequent changes in the roster of faculty. Professors may leave their current positions to pursue career advancement or retire, and faculty members may leave due to personal reasons, also no flexible and dynamic mechanism exists to compile faculty information and generate reports during accreditation, ISO, and CHED visits. Another cause is reports on teaching assignments that are manually prepared that are sometimes miscalculated by the program head/dean of the teaching assignment units and/or the number of contact teaching hours of every faculty violating what is prescribed in the CMO. Also, there is no constant mechanism to remind faculty of the target assigned in the approved Faculty Development Program, making it difficult to monitor their progress in terms of educational attainment and training and development. Aside from this, they have a problem in terms of the existing process of profiling faculty information requires a lot of manpower, and the files are stored in different computer stations/devices. Google Drive is used to store files, but it has a file storage limit and users sometimes use their Google account to do so. This creates a problem in terms of the storage of faculty information and attachments.

It is the reason why, the faculty of CICS of Marinduque State College, gains the deepest desire to find a better way of improving the present condition by developing a web-based application called FlexiFile: Dynamic Faculty Profiling System for CICS, which will help solve their problems in terms of reports and updating, storing, collecting, organizing, and managing data and information of the faculty members.

**1.2 Project Objectives**

The project primary aims are to develop a web-based system called Dynamic Faculty Profiling System for Marinduque State College, College of Information and Computing Sciences.

*The study specifically aims to:*

* To study and analyze the process of existing process of faculty profiling.
* Determine if the system is feasible in terms of technical, operational, and economic feasibility.
* Design and develop a dynamic faculty profiling system for the faculty of CICS.
* Test and evaluate the functionalities and user acceptability of the developed system.

**1.3 Significance of the Study**

The proposed system will be beneficial to the faculty because it will be convenient for them to update their profile and generate reports.

Another significance of this proposed system is the Task Force Leaders and Members for Faculty Area in Accreditation It could provide convenience to the concerned persons in the preparation of the needed reports, matrix, and attachments during program accreditation.

The Dean and Program Head will benefit from this proposed system during the Certificate of Program Compliance evaluation in preparation of dynamic faculty profiling based on what is needed by the assigned validator.

**1.4 Scope and Limitation of the Project**

FlexiFile is intended for the Faculty of the College of Information and Computing Sciences. The development of the project includes the following activities such as finding a prospective organization and conduct an initial data gathering/interview, defining the problems and feasibility analysis. Another activity is gathering project requirements which are the resources to use in the development of the project which is composed of creating a Project Plan, WBS, and Gantt Chart. Moreover, the proponents created prototype which will serve as basis for the entire development which includes coding, debugging, and system and user acceptance testing. After the execution of the project, the reviewing of the design and development of the project will be implemented to update changes in the project and submit the final documentation to implement the project to the organization.

The features of the web-based system are the system should allow faculty members to upload their PDS in xlsx file copy and manage their own profiles, which can include personal and professional information such as their education, research, publications, awards, and courses taught. The system allows real-time updates to faculty profiles, ensuring that the information presented is always current and accurate; And also necessary attachments such as Certificates, TOR, Diploma, etc. can be uploaded and make it organized for particular purposes. The system will have a Faculty Teaching Assignment Monitoring and Centralized data and Bigger File Storage. Also the system will monitor the progress of faculty in terms of Educational Attainment and Attended Training and Development based on the approved Faculty Development Program of the college. The system should generate dynamic reports that provide insights into faculty data, such as research productivity, teaching effectiveness, and service contributions, which can be used for decision-making and strategic planning purposes.

The project is limited to other faculty in Marinduque State College and other educational institution. The target user of development project are only the member of the College of information and computing sciences faculty in Marinduque State College.

**1.5 Definition of Terms**

*Dynamic****.*** Refers to the ability of the system to update and change the profile information as faculty member’s academic and professional activities evolve.

*Faculty member.* An individual who is employed by a higher education institution and is engaged in teaching, research, or other academic activities.

*Profile.* A detailed information of faculty member’s academic and professional background, including education, research, publications, awards, and courses taught.

*Task Force Leader.* The one who collect faculty documents.

**2. REVIEW OF RELATED LITERATURE**

**2.1 Challenges Associated in Faculty Profiles and Records in Higher Educational Institutions (HEIs)**

Faculty profiles and records serve as the foundation for establishing a faculty member. They are reviewed by significant stakeholders when making decisions and are used administratively to create policies and explain organizational structure, procedure, and operations. Therefore, it must be properly managed during the course of their life cycle in order for them to have value in a university context [3].

Given that most university documents are paper-based and subject to regular updating, monitoring, and folder filing, it is a burden on the faculty and a time constraint in most universities [4]. Institutional leaders struggle with making high-level decisions that are frequently based on outdated or insufficient information about faculty performance. Mandated reporting for accreditation organizations can become difficult when current data on faculty qualifications and academic productivity are unavailable or inaccurate, and faculty attrition owing to institutional dissatisfaction must also be addressed [5].

These issues are magnified in an institution with a diverse faculty appointment combination, including employed and volunteer faculty as well as non-traditional full and part-time members spread across multiple institutions, campuses, hospitals, and outpatient clinics, because the educational and scholarly activities and levels of engagement of these faculty are difficult to assess using traditional standards [6].

Many institutions also lacked a readily available and retrievable database of faculty members' activities, achievements, and output that may be used in annual faculty evaluations and complete record audits for accreditation assessments, program reviews, and strategic planning. Databases maintained by departments or divisions are particularly complex for the university to merge in order to cover massive gaps in institutional records [7]. Several HEIs continue to store and manage the faculty data using folders and Microsoft Excel. According to a study, Bestlink College of the Philippines found various data management issues, such as searching for faculty data saved in folders, which is time-consuming and carries an exceptionally high risk of data security [8].

Moreover, faculty workload becomes inequitable whenever departments lack information and transparency about how work is shared. Teachers within the same department engage to numerous work tasks at different levels of effort, many of which go unrecorded. Departments frequently lack mechanisms for faculty to compare their workloads to others [9].

**2.2 Faculty Profiling System**

A faculty profiling system is a system that is being developed to manage demographic information about a specific faculty member. It records faculty key information, reduces paper work, and safeguards confidential information.

Numerous universities have adopted faculty profile systems that track the educational outputs and activities of faculty and researchers. These systems typically feature public profiles as well as tools for finding collaborators or experts. They can be used to generate reports for faculty yearly reviews, promotions, and tenure, as well as to help faculty comply with open access policy by enabling deposit in institutional repositories [10].

Faculty profiling system in schools requires the use of information technology. The demand for a computerized system is vital for establishments, particularly schools. It is useful for optimizing the work process and aims to save time and effort by automating the process of creating faculty profiles [11].

**2.3 Related Faculty Profiling Systems**

A centralized Faculty Performance Dashboard for Health Sciences faculty members (including researchers, teachers, administrators, leaders, and clinical educators) was designed at McMaster University in order to improve feedback and scholarly data reporting. The research identified various requirements and considerations for the development of a teacher performance dashboard, such as that the dashboard must be flexible, dynamic, structured by user groups, and provide specific criteria for the relevant faculty responsibilities. The quality, governance, and weighting of data in the dashboard must all be considered. Notably, the installation of this technology would improve faculty learning and assessment, data reporting, and faculty development in the Health Sciences [12].

The Faculty Profiling and Capability Enhancement Advisor System using an Intelligent Predictive String Search Algorithm is a system that could generate a faculty development plan based on the profiles and credentials in the individual Personal Data Sheets of the faculty members. The system can also recommend additional training for faculty members depending on their expertise. The system generates these findings accurately by applying the IPSSA. It is recommended that Secure Socket Layer (SSL) encryption be used to increase code and system security. Another feature that can be incorporated is a mechanism that allows the system to update forms as they are updated [13].

The Teacher Profiling System for Novaliches High School is a system that automates teacher profiling records and processes. It was created using the Systems Development Life Cycle (SDLC) method. The study was designed and implemented successfully at Novaliches High School. Its adoption makes it easier for school administrators to acquire data about teachers, and their stakeholders will receive better service in handling all of the teachers' data. It improved management decisions and services for all Novaliches High School stakeholders. The information of the teachers is now protected. The work of the employees in the registrar office was also made easier by this approach. [14].

The Profiling System Teacher at Cielito Zamora High School is a system that allows teachers to conveniently access and manage their information within the organization. The software would be created by the powerful coding tools of NetBeans on the frontend and a SQL database on the backend. The system was designed using quantitative research. The proposed system is an integrated set of components for recording and organizing the information or details of teachers, which were recorded and arranged in a database that can be updated, resulting in accurate and secure information. It cannot be easily accessed by a person who is not familiar to use the system [15].

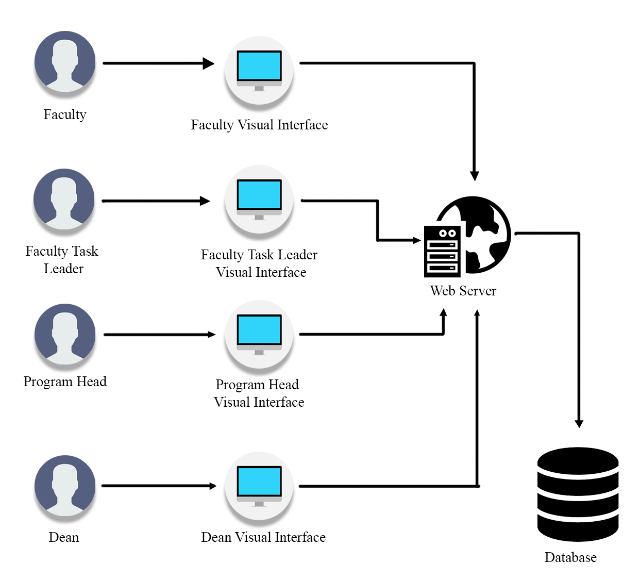
The Teacher Profiling System for Tala High School is a system that can assist clients in improving their current processes for sorting teachers' profiles, monitoring teacher evaluations, record storage management, and ensuring data security. The solution to the aforementioned challenges was to create a database for record management and profile storage of profiles in order to simply manage and store them for easy sorting and retrieval. This system is capable of adding profiles, displaying records, updating records, adding profiles, evaluating teachers from each department, and retrieving profiles. The researchers included a teacher evaluation to see if the teacher performed well [16].

Rush University developed a Customized Faculty Management System that connect faculty productivity and academic achievement with Annual Performance Evaluation. Given the many responsibilities and contributions of faculty members, the university decided to create a centralized, an automated workflow-driven system for real-time monitoring of academic productivity connected to academic progress throughout the faculty life cycle in order to optimize faculty and administrative efforts and enable uniform tracking of professional growth throughout the institution's multiple departments and colleges [17].

This chapter shows that the FlexiFile: Dynamic Faculty Profiling System will provide significant benefits for the College of Information and Computing Sciences as this will aid the challenges discussed in this section. Range of studies and literature on faculty profiling systems highlights the ability of system to effectively centralize faculty-related information, capture real-time updates and accuracy, facilitate expertise identification and collaboration, aid in resource allocation and workload management and offer decision support. Related studies not only highlight successful implementations but also shed light on the challenges, limitations, and failures encountered in similar systems. By examining these studies, developers can learn from past mistakes and avoid potential pitfalls during the design and development stages.

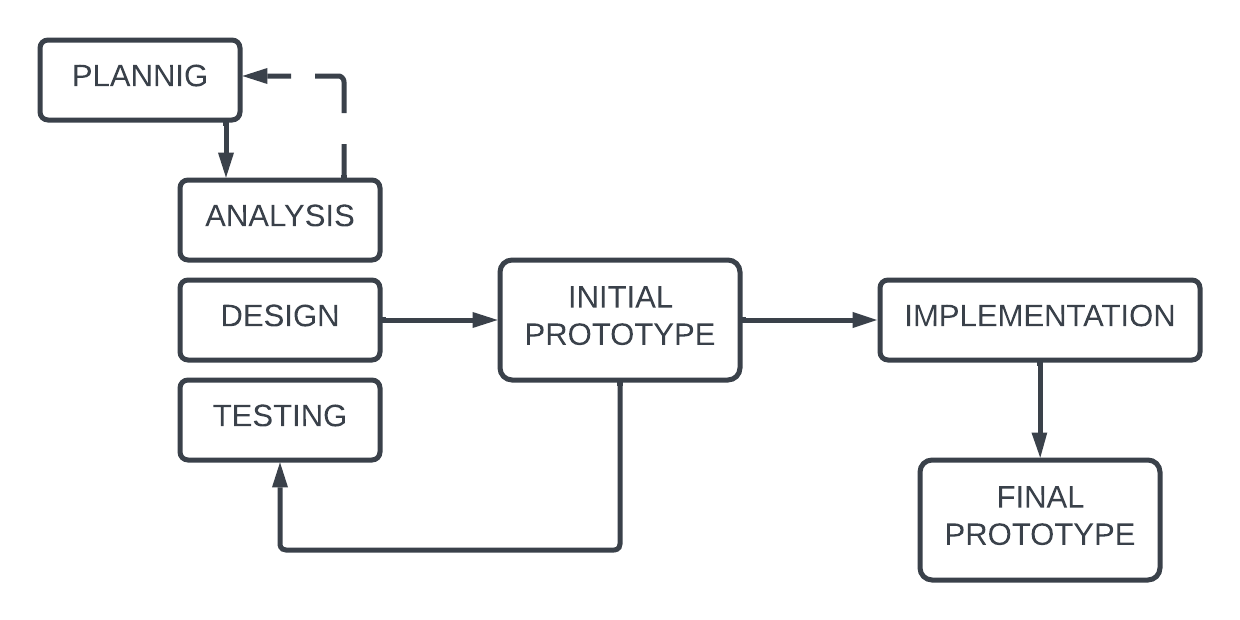
The findings and insights from related studies serve as a valuable resource for making informed design decisions. Developers leveraged the lessons learned and recommendations from these studies to guide the system's architecture, functionalities, user interface, and other design elements. This helps in creating a user-centric and effective system.

The system come up in a feature that offers flexibility in defining and customizing profile fields based on the specific requirements of the institution. Users can enable the inclusion of additional fields or categories tailored to the institution's unique faculty evaluation criteria or disciplinary needs.

**2.4 System Architecture**

**Figure 1.** *System Architecture*

Figure 1 represents the system architecture of the proposed system. FlexiFile: Dynamic Faculty Profiling System is made up of several components that function together to effectively manage faculty information within an educational institution. At its core, the system comprises Faculty Members who serve as the key stakeholders and provide their respective profile data. The Faculty Task Force Leader oversees the overall management and coordination of faculty profiles, ensuring accuracy and completeness. The Dean manages the teaching load of the faculty members and oversees the progress of every faculty member. The Program head manages the teaching load of faculty members and act as the System Administrator to manage user accounts, including creating new accounts, modifying user details, and deactivating or deleting user accounts.. A web server serves as the platform for hosting the system, allowing users to access and interact with faculty profiles seamlessly. Lastly, a database acts as the central repository for storing and organizing the faculty data, enabling efficient retrieval and updating of information. Together, these components form an integrated system that facilitates dynamic faculty profiling, enhancing collaboration and transparency within the educational institution.

**3. METHODOLOGY**

**Figure 2. Prototyping Model**

The project will be developed using a prototyping methodology (Figure 2). Prototyping methodology is an approach used in software development to create prototypes of a system or application. It involves building quick, simplified versions of the software to gather feedback, validate design concepts, and identify potential improvements. The main goal of prototyping is to enhance communication between stakeholders, developers, and users, and to refine the final product based on iterative feedback loops.

**3.1 Requirement Analysis Procedure**

A series of interviews and observations was conducted to acquire the essential information and processes from the organization. The faculty of Information Computer Sciences at Marinduque State College is the target organization. The organization was given a Letter of Interview (Appendix A). A face-to-face interview with the Task Force Leader of AREA II – Faculty was conducted utilizing the prepared open-ended questions (Appendix B). The replies of the faculty were captured, as the developers requested permission to record the interview for future.

Following the interview, the data acquired was examined to better understand the organization's needs. In addition, the unpublished thesis and research relevant to the project were reviewed in order to broaden the understanding of the developed study.

A Work Breakdown Structure (Appendix C) was developed to determine the scope of the project based on the sequence of the tasks that must be accomplished. It is a document that serves as a guide for the developer to complete the written statement of work.

The Gantt Chart (Appendix D) was used to determine the timeline for the project activities that the development team must complete.

A Data Flow Diagram (Appendix E) was built to depict the process of the organization's present system. It was created to depict the interaction between the system and the outside entities. It is an excellent tool for thoroughly understanding the current process.

The Use Case (Appendix F) was created to demonstrate the processes of the produced system and how the user interacts with it.

The User Story (Appendix G) was used to explain the functions and features of the proposed system in a definite way.

The Entity-Relationship Diagram (Appendix H) was used to depict all of the entities and their relationships in the system by identifying all of the various tables that could be included in the system's database.

The Database Schema (Appendix I) was used to depict the database's logical structure. It also specifies how the data in the system is arranged. All the entities indicated in the ERD was used to illustrate the structure of the entire database.

**3.2 Feasibility Analysis Procedure**

A Feasibility Study was carried out to establish whether the project is worthy of future development. A preliminary investigation was done to analyze the existing system. An official letter (Appendix A) was given to the organization for approval in undertaking the inquiry, which will include several interviews with the faculty.

Operational Feasibility was utilized to determine and ensure that the organization's development requirements are met. To learn about the organization's business process, a series of interviews with faculty will be undertaken. The professors were asked open-ended questions (Appendix B). The interview cycles among the faculty members. The data gathered was analyzed to determine whether the organization's operations are feasible. The developers used SWOT Analysis (Appendix J) to determine the organization's strengths and weaknesses in adapting to the changes that the system may bring, as well as the opportunities and threats that the organization may encounter when the system is implemented in the organization. With Gap Analysis (Appendix K), the organization's available technological resources will be examined and compared to the minimum technical specification.

Technical feasibility was used to determine whether the developers have the necessary technical resources to create the system. The developers determine whether or not they are capable of developing the system. The SWOT analysis (Appendix L) was used to determine the developers' strengths and weaknesses. The advantages and disadvantages that the developers may encounter while designing the system will also be highlighted. The developers' available technical resources, which include the hardware and software required for development, will be examined. Via Gap Analysis (Appendix M), the specifications were reviewed and compared to the minimal technical specifications.

Moreover, an Economic Feasibility Analysis was done to determine whether the project's advantages outweigh the predicted cost using Cost Benefit Analysis and Break-Even Analysis (Appendix N). The organization's year supplies and materials was requested, and the following was determined: the total amount of how much the organization consumes in materials and supplies, the estimated expenses of the organization for their supplies increased by 10% every year, the supplies and materials that the organization still needs if the system is implemented, the materials lessen, as the system intends to reduce the papers and another unnecessary materiel Then, determine whether the system would be worth the expenditure if constructed and implemented.

**3.4 Development and Testing Procedure**

Upon completion of the feasibility analysis, the developers proceed with the design and coding phases of the application.

The System Architecture (Appendix O) and Test Plan (Appendix P) will be built for the FlexiFile to describe the tasks (processes and threads) involved in the system's execution, as well as its interactions and configurations It also describes the assignment of the object's classes to tasks.

The system development model used in this project is prototyping model. In this model, the progress of the system will be shown to the faculty and allowed them to see the product earlier. The initial prototype features only the basic functionality according to the faculty requirements. The process started in gathering data that was done by interviewing the faculty and reviewed other related documents. Then the gathered data was analyzed, and it resulted in a requirements document. It will be the basis of the initial prototype that will be developed by the developers and presented to the client. It will be tested and improved as per the faculty’s feedback. The cycle continues until the user approves the prototype and finds it satisfactory. In creating the prototype design, the chosen design tool is Figma, which will be utilized for creating the user interface and implementing basic system functionalities (Appendix Q). Figma is preferred due to its efficiency and the developers' familiarity with the software.

The system will be developed with the help of Use Case (Appendix F), as it was used as a guide of the developer for the needed process and functionality. The Entity-Relationship Diagram ERD (Appendix H) was illustrated and used to define the relationship of the entities present in the process used in constructing the database schema. The Database Schema (Appendix I) was used in creating the database structure. It includes the table, fields, type, rules, and constraints. Then, it was implemented using MySQL. Visual Studio Code is selected as the integrated development environment (IDE) for its enhanced efficiency in coding and designing the user interface. Cascading Style Sheets (CSS) are employed for designing the user interface, leveraging the responsive grid system and extensive library of pre-designed components offered by Bootstrap. This facilitates the creation of visually appealing and mobile-friendly websites. JavaScript is utilized to augment websites with interactive features such as form validation, sliders, dropdown menus, and real-time updates. Its versatility also enables complex operations like data manipulation, API integration, and asynchronous communication, contributing to the development of dynamic and responsive web applications.

PHP is chosen as the backend programming language due to its versatility and robustness in handling server-side tasks. With its extensive libraries, frameworks, and database integration capabilities, PHP proves to be an excellent choice for efficiently building scalable and dynamic web applications. MySQL is employed as the database management system for the project.

Following the development phase, the system undergoes several evaluations. Alpha Testing will be conducted to assess the functional suitability of the system and identify potential errors (Appendix R). Cross-browser testing will be performed to verify that the system's functionality, performance, and visual appearance remain consistent across multiple browsers (Appendix S). Security Testing will be carried out to assess the system's security measures (Appendix T). Subsequently, User Acceptance Testing will be performed to gauge the system's usability (Appendix U).

The Software Quality Evaluation Based on the ISO 25010 Software Product Quality Standard (Appendix V) will be used by the Information Technology experts to test and evaluate the developed system. It was used to measure the system quality based on the expert’s feedback. The experts examined each function of the developed system and rated it based on the given criteria. Upon meeting the necessary criteria, the system is deemed ready for deployment.

**3.4 Implementation Plan**

The system will be deployed or installed to the operational environment once it has passed a number of reviews and improvements and has satisfied the organizational criteria. An installation plan (Appendix W) states how the system will be installed in the organization. Also, a handbook will be made available to instruct users on how to operate the system. The developers will arrange a meeting based on the availability of both sides if the organization requests a more thorough briefing for the faculty. The faculty of the organization will receive a more thorough understanding of the system during this briefing, giving them a more knowledgeable foundation on how to utilize the system.

**4. RESULTS AND DISCUSSION**

**4.1 Description of the Existing System**

The Human Resource Management and Development Office requires all college faculty members to update their Personal Data Sheet on a yearly basis. Aside from the annual update, faculty reports for the three prior years must be presented for Program Accreditation, Certificate of Program Compliance, and ISO Audit.

In College of Information and Computing Sciences, faculty-related information was initially managed manually using paper-based methods.

Faculty members are often obliged to fill out forms to update their profiles. These forms normally include sections for personal information, educational background, work experience, areas of expertise, research interests, and publications.

After completing the forms, faculty members send them to the administrative staff in charge of maintaining faculty records. This may entail submitting the forms in person or via internal mail systems.

The updated information from the forms is then manually entered into the spreadsheets and store in the faculty database or information management system by the administrative staff. This procedure requires the administrative to type in the details.

After data entry, administrative staff may cross-check the updated information with existing records or contact the faculty member directly for clarification or further documentation as needed. The modified information will be approved for inclusion in the faculty profiles after it has been confirmed.

The modifications that have been granted are then entered into the faculty profiles within the database or records system. To accommodate the updated information, existing fields may need to be modified or new sections added.

Faculty members are typically notified of the completion of profile revisions via email, internal announcements, or in-person interaction. They may be given a copy of their revised profiles to evaluate as well.

When faculty members need to update or amend their profiles, the same process of filling out paper forms, submitting, manual data entry, verification, and profile revisions is performed.

**4.2 Requirements Specification**

*4.1.1 Functional Requirements*

**Module 1: Account Registration and System Management**

* The system shall allow users to register in the system classified as Faculty Member, Task Force leader, Dean, or Program Head.
* The system shall enable the Program Head to act as the System Administrator to manage user accounts, including creating new accounts, modifying user details, and deactivating or deleting user accounts.
* The system shall allow the Administrator control and manage user access to different system functionalities or resources. They may assign user roles, permissions, and privileges based on user responsibilities and requirements.
* The system shall allow the Program Head to set the Academic Year and current semester

**Module 2: Faculty Profiling Management**

* The system shall allow faculty members to upload their PDS to create a Faculty Profile.
* The system shall enable real-time updates to faculty profiles.
* The system shall notify the Faculty Task Force Leader if there are updates in the PDS of the registered faculty.
* The system shall allow the faculty to upload attachments and supporting documents and sort them according to which folder they should be stored.
* The system shall provide sets of folders for each faculty that contains all the uploaded attachments and supporting documents such as Research, Education, Trainings and Seminar, Certification, etc.
* The system shall allow the Faculty Task Force Leader to sort all the uploaded attachments and supporting documents based on the given condition like by date, by category and by faculty name.

**Module 3: Faculty Teaching Assignment and Designation Monitoring**

* The system shall allow the Dean or Program Head to manage the teaching loads of faculty member.
* The system shall monitor the teaching load and teaching hours of faculty members based on the allowable units stipulated in CHED Memorandum Order for BSI/T and BSIS program.
* The system shall allow the Dean to assign designation/s to a faculty
* The system shall enable the Faculty to view their teaching load and designation

**Module 4: Faculty Development Program Manage**

* The system shall allow the Dean to assign a faculty development plan activity to a faculty
* The system shall enable the Dean to see the progress of every faculty in accordance to what is stated in the Faculty Development Program.

**Module 5: Reports and Visualization (Dashboard)**

* The system shall allow the Faculty Task Force Leader to generate the following reports:
  1. Matrix and Chart of Faculty based on Educational Attainment
  2. Matrix and Chart of Faculty based on Appoint Status
  3. Matrix and Chart of Faculty based on Academic Rank
  4. Matrix and Chart of Faculty based on Teaching Assignment
  5. Matrix and Chart of Faculty based on Work Experience
  6. Matrix and Chart of Faculty based on Membership to Professional Organization
  7. Matrix and Chart of Faculty based on Research Profile
  8. Faculty Development Plan (Progress bar)
* The system shall allow the Faculty Task Force Leade­r to generate dynamic faculty profile or various designs of report depending on a particular purpose or need using the uploaded data
* The system shall generate list of faculty who updated or did not update their PDS
* The system shall generate list of faculty who submitted or did not submit their Attachments and supporting documents

*4.1.2 Non- Functional Requirements*

* **Data Management**

1. The system shall provide centralized and bigger storage of faculty information as well as a more convenient venue to update the said information including generation of reports in real-time.
2. The system shall enable the Administrators be responsible for managing data within the system. This can involve tasks such as creating, editing, deleting, or archiving data, as well as ensuring data integrity, security, and backup.

* **Performance**

1. The system should respond quickly to user interactions, providing a seamless browsing experience for administrators and users.
2. The system should be able to handle a large number of concurrent users without significant performance degradation.
3. The response time for search queries and data retrieval should be optimized to ensure efficient access to faculty profiles and associated documents.

* **Usability and User Experience**

1. The system should have an intuitive and user-friendly interface, allowing administrators to navigate and perform tasks with ease.
2. The user interface should be visually appealing, consistent, and responsive across different devices and screen sizes.
3. Clear and informative error messages should be provided to assist users in resolving any issues encountered during system interactions.

* **Security**

1. The system should employ robust security measures to protect the confidentiality, integrity, and availability of faculty profile data and related documents.
2. User authentication and authorization mechanisms should be implemented to ensure that only authorized individuals can access and modify data.
3. Proper data encryption techniques should be employed to secure sensitive information, such as user credentials and personal details.

* **Scalability**

1. The system should be designed to accommodate future growth and increasing demands without compromising performance.
2. It should be capable of handling a growing number of faculty profiles, documents, and user accounts without significant impact on system responsiveness.

* **Reliability and Availability**

1. The system should be highly reliable, minimizing downtime and ensuring data integrity.
2. Adequate backup and disaster recovery mechanisms should be in place to protect against data loss or system failures.
3. The system should have measures in place to handle unexpected errors or exceptions gracefully, providing informative error messages and recovering without data loss.

* **Compatibility**

1. The system should be compatible with a variety of web browsers and versions, ensuring consistent functionality and visual appearance across different platforms.
2. It should support multiple operating systems, such as Windows, macOS, and Linux, allowing users to access the system from their preferred environment.

* **Maintainability:**

1. The system should be designed in a modular and well-structured manner, making it easier to maintain, enhance, and extend in the future.
2. Proper documentation, including code comments and user manuals, should be provided to assist in system maintenance and support.

**4.3 Results of the Feasibility Analysis**

*4.3.1 Operational Feasibility*

For the operational feasibility, SWOT Analysis was analysed in order to determine organization's ability to adapt to potential risks that may encounter throughout the development and implementation of the system.

The organization has the required technology resources, such as desktop computer, a three-in-one printer, and an Internet connection, to do operations and prepare reports. This provides developers with the necessary tools, enable smoother development processes. Also, faculty members already possess the technical skills necessary to use a computer system. Faculty members with technical skills are more likely to embrace new technologies, tools, and updates introduced in the computer system. They can proactively explore and leverage advanced features and functionalities, and adapt to system enhancements. In addition, faculty members are cooperative and have the intention to contribute to the enhancement of a developed system. This creates a collaborative and mutually beneficial partnership between developers and end-users.

For the opportunities, the ability of the proposed system to be adopted by faculty from other departments brings several advantages. It creates a unified platform that enhances communication, coordination, and efficiency across the institution, ultimately contributing to a more integrated and collaborative academic environment.

In assessing the potential threats, power shortages while developing the system can result in data loss or corruption if the system is not equipped with appropriate backup mechanisms and surge protection. Unsaved work may be lost, and databases or files can become corrupted, leading to potential setbacks in system development and the need for data recovery. Also, loss of internet connection hampers communication channels, making it difficult for developers, and the organization to collaborate effectively. These results delay in decision-making, feedback sharing, and progress updates. Lastly, bugs and coding errors can cause system malfunctions, crashes, or unexpected behavior. This can lead to downtime, loss of productivity, and disruptions in business operations.

*4.3.2 Technical Feasibility*

For the technical feasibility, the conducted SWOT Analysis shows that the developers are technically feasible for the development in the implementation of the system.

Having expertise in using PHP, Scripting Language, HTML, CSS and MySQL empowers team to have full control over the system development process. In addition, having collaboration skills, enabling them to facilitate effective requirement gathering and analysis ensuring that the system meets the desired objectives. Developers also have improved problem-solving skills which enable team members to identify, analyze, and resolve problems efficiently. They can apply logical thinking and troubleshooting techniques to diagnose the root cause of an issue and implement effective solutions in a timely manner. In addition, developers have the necessary tools and technologies to perform out the proposed project efficiently.

Poor time management skills can indeed be considered a weakness of the team. Inadequate time management can cause elevated stress levels. It may be challenging to prioritize tasks based on their importance and urgency. This can result in spending disproportionate time on less critical tasks while neglecting high-priority assignments.

For the opportunities, developers can improve their proficiency in software development, project management, and collaboration. Through engaging with this software development project, it allows developers to apply their knowledge, manage projects better and allow them to hone not only their knowledge but as well as the cooperation skills. Also, sudden changes in requirements and other recommendations may assist developers in improving their analysis and problem-solving skills.

In considering the potential threats, power shortages while developing the system can lead to sudden work interruptions and system shutdowns. This disrupts the development process and can cause loss of unsaved work, leading to time and effort wastage. System failures of hardware components due to power surges can result in the need for repairs or replacement of equipment, leading to additional costs and delays in development. In addition, development tools failure can impact the quality assurance and testing processes. If testing frameworks, automated testing tools, or debugging utilities malfunction, it becomes challenging to identify and resolve software defects or ensure the desired quality of the developed system. This can lead to the release of software with potential bugs or reduced testing coverage. Lastly, unstable internet connection limits the access to online resources. Developers often rely on online resources, documentation, libraries, and forums for reference and problem-solving. Unstable internet connectivity can restrict access to these resources, making it challenging to troubleshoot issues or learn new concepts efficiently.

*4.3.3 Economical Feasibility*

The economic feasibility analysis was conducted to provide a comprehensive breakdown of the materials and supplies required by the existing and developed systems. This breakdown enables an accurate estimation of the corresponding amounts and quantities needed for the entire year to support their respective processes. The appendix containing the analysis presents a detailed overview of the costs associated with these materials and supplies for both systems. Additionally, the analysis considers the estimated operational expenses, which were calculated based on an assumed annual increase of 10%. The development cost of ₱4,090.00 encompasses various expenditures, including domain name registration, web hosting, electricity consumption, developer's compensation, and other essential supplies utilized throughout the development phase. It is important to note that this cost analysis is solely for demonstration purposes as part of a school project and aims to illustrate the potential expenses involved in a real-world operational scenario.

**4.4 Description of the Developed System**

The Dynamic Faculty Profiling System is an advanced and interactive system that enables the efficient organization, updating, and retrieval of faculty information, facilitating effective faculty management and decision-making processes The system offers flexibility in defining and customizing profile fields based on the specific requirements of the institution. Users can enable the inclusion of additional fields or categories tailored to the institution's unique faculty evaluation criteria or disciplinary needs.

The system allows administrators or faculty members themselves to create individual profiles by entering personal details, educational background, teaching experience, research expertise, publications, and other professional achievements into the system.

Faculty members are provided with access to their profiles, allowing them to update their information as needed. They can add new publications, update their teaching experience, include recent research activities, and upload relevant documents. The system ensures data integrity and consistency by validating and verifying the entered information.

The dynamic faculty profiling system offers customization options to tailor the profile fields and categories to the specific requirements of the institution. Faculty members can configure the system to include additional fields or modify existing ones to align with the institution's faculty evaluation criteria or disciplinary needs.

The system provides a centralized document repository where faculty members can upload and manage their supporting documents such as resumes, certifications, research papers, and teaching materials. The system ensures secure storage and easy retrieval of these documents when needed.

The dynamic faculty profiling system generates comprehensive reports and analytics based on the collected data. These reports provide valuable insights into faculty performance, research output, teaching evaluations, and other relevant metrics. The reports assist administrators and decision-makers in assessing faculty performance, identifying areas for improvement, and making informed decisions related to promotions, tenure, and resource allocation.

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