

**Faculty Performance System**

A Capstone Project Presented to the Faculty of Polytechnic University of the Philippines - Quezon City Branch

In Partial Fulfillment of the Requirements for the Degree Bachelor of Science in Information Technology

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BSIT 4-2

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**APPROVAL SHEET**

This capstone project titled: “**Faculty Performance System ''** prepared and submitted by Miguel Angel Y. Cantuja, Rafael Jayson M. Logan, John Vic A. Macusi, Daniel Jose D. Reyes, and Angel Mae A. Taga-oc, in partial fulfillment of the requirements for the degree of Bachelor of Science in Information Technology.

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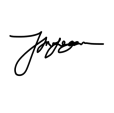




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We certify that this project study does not incorporate, without acknowledgement, any material previously submitted for a Degree of Diploma in any university and to the best of our knowledge and belief. It does not contain any material previously published or written by another person or us except where due reference is made in the text. We also hereby give consent for our Capstone Project, if accepted, to be available for photocopying and for inter-library loans, and for the title and summary to be made available to outside organizations.

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**ETHICAL CONFORMITY SHEET**

We have reviewed the Code of Ethics and affirm that this research will conform to the ethics code, particularly with respect to











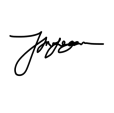
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**ABSTRACT**

Title: **Faculty Performance System**

**Title: Faculty Performance System**

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**Degree:** Bachelor of Science in Information Technology

**Institution:** Polytechnic University of the Philippines – Quezon City Branch **Year:** 2024

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The Capstone Project - Faculty Performance System (FPS) addresses the imperative need for an advanced and comprehensive solution to enhance the evaluation and management of faculty performances within Polytechnic University of the Philippines - Quezon City Branch. The project focuses on the development and implementation of a sophisticated FPS, integrating cutting-edge technologies and methodologies to streamline performance assessments. Key components include real-time data synchronization with the Faculty Information System (FIS) and Research Information System (RIS), ensuring accurate and up-to-date faculty information. The FPS aims to optimize workflows, automate data gathering, and provide actionable insights for administrators through analytics tools. By fostering scalability, security, and user-friendly interfaces, the project aspires to revolutionize the faculty management landscape, fostering a culture of transparency, efficiency, and continuous improvement within educational institutions. The Capstone Project envisions a robust FPS as an integral tool in shaping the future of academic excellence and institutional success.

*Keywords: Faculty Performance System, Analytics*

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The team also expressed appreciation to their Capstone Professor, Kezaiah M. Cruz, for her valuable insights and constructive feedback that significantly contributed to the refinement and improvement of the project. Professor Cruz expertise and dedication to academic excellence have been a guiding force throughout this journey.

Special thanks go to Professor Rosicar E. Escober for her guidance and support, which added another layer of depth to the project development process. Professor Escober ‘s insights and recommendations have been instrumental in enhancing the overall quality and effectiveness of the capstone project.

As a team, we are grateful for the collective wisdom, encouragement, and mentorship provided by Prof. Demelyn E. Monzon, Prof. Kezaiah M. Cruz, and Prof. Rosicar E. Escober. Their commitment to our academic growth and project development is deeply appreciated, and we acknowledge their significant contributions to the success of our capstone project.

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**I. Introduction**

**Background of the Capstone Project**

In the modern higher education landscape, universities and colleges play an essential part in determining the future of individuals and societies. With the rapid advancements in Technology and Education, educational institutions are constantly evolving to meet the demands of a globally competitive world. In this dynamic environment, the efficient management and evaluation of faculty performance stands as a foundation in the pursuit of academic excellence. The Faculty Performance System (FPS) emerges in response to the intricate challenges faced by Polytechnic University of the Philippines - Quezon City Branch (PUPQC), particularly in the realm of Faculty Performance Assessment. Traditionally, faculty evaluations have been conducted using inconvenient and time-consuming methods, involving piles of paperwork, numerous spreadsheets, and disparate data sources.

One of the pressing issues faced by PUPQC is the inefficiency inherent in conventional faculty evaluation methods. Paperwork and manual data entry are time-consuming and can lead to errors and inconsistencies in the evaluation process. The decentralized nature of data storage often results in the fragmentation of faculty-related information across various departments, making it challenging for administrators to access a comprehensive and unified view of faculty performances. In this context, the Faculty Performance System seeks to revolutionize the way PUPQC approaches faculty performance evaluation. Employing cutting-edge technology and innovative software solutions, the project aims to create a seamless, centralized, and user-friendly platform for institutions. This platform will empower the organization with the tools necessary to navigate the intricate web of faculty data efficiently and make informed decisions that propel their institutions toward greater academic achievement.

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The Faculty Performance System recognizes the pivotal role of Institution Head administrators and endeavors to equip them with a powerful tool that provides real-time access to faculty-related data and performance metrics. Institutional Head Administrators undertake diverse responsibilities such as strategic planning, resource allocation, and fostering an optimal learning environment for faculty and students. To execute these duties with precision, administrators necessitate timely and accurate insights into faculty performance. By incorporating advanced data analytics, the Faculty Performance System will not only streamline the evaluation process but also offer customized reports and actionable insights. These insights will enable Head Administrators to identify trends, recognize exceptional performances, and address areas for improvement promptly. In doing so, the project not only enhances the efficiency of administrative processes but also contributes significantly to the institution's strategic decision-making capabilities. The challenges posed by traditional faculty evaluation methods are not mere hurdles but opportunities for transformation. The Faculty Performance System is an outstanding representation of innovation, guiding educational institutions toward a future in which administrative tasks are streamlined, decisions are data-driven, and faculty members are empowered to excel in their roles.

**Context and Scope**

The Faculty Performance System is developed in response to the growing need for a comprehensive and data-driven approach to evaluate and enhance Faculty Performances within PUPQC. As the demand for quality education rises, the institution is increasingly focusing on assessing and improving the effectiveness of their faculty members. Traditional evaluation methods, such as annual performance reviews often lack the depth and insights required to identify areas of improvement and recognize exceptional performance. Therefore, there is a

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need for a systematic and analytical approach to evaluate faculty performances, which can be fulfilled by the Faculty Performance System.

The scope of the project encompasses the design, development, and implementation of the Faculty Performance System within PUPQC. The system will be designed to gather and consolidate data from various sources and administrative assessments. It will utilize data analytics and visualization techniques to present an overall analytics dashboard that provides a comprehensive overview of faculty performances. The Faculty Performance System is designed to be scalable and adaptable, allowing for future enhancements and integration with other existing institutional systems. It will adhere to data privacy and security regulations to maintain the confidentiality and integrity of faculty performance data.The project will involve conducting user requirements analysis, system design, database development, data integration, and user interface development. It will also include testing, debugging, and refining the system to ensure its functionality and usability.

**Problem Statement**

The current faculty evaluation process at PUPQC lacks an efficient system for collecting, analyzing, and presenting comprehensive performance data, resulting in a time-consuming evaluation process for administrators and limited actionable insights. The prevailing evaluation process heavily relies on subjective measures, such as annual performance reviews and informational feedback, which may not adequately capture the complete spectrum of faculty performance indicators. This leads to a lack of transparency and consistency in evaluating faculty members, hindering the identification of improvement areas and the recognition of exceptional performance.

The absence of a well-structured and efficient faculty performance system within PUPQC hampers administrators' capacity to assess and enhance the performance and

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effectiveness of faculty members. To rectify these issues, the envisioned Faculty Performance System is designed to collect and consolidate data from various sources, including student feedback, peer evaluations, administrative assessments, and other pertinent inputs. Such a comprehensive approach will facilitate an objective and thorough overview of faculty performance. The proposed system aims to address these challenges and optimize the faculty evaluation process for better outcomes.

**Objectives and Goals**

The primary objective of the Faculty Performance System is to develop an advanced and sophisticated system that not only comprehensively analyzes faculty data but also revolutionizes the way institutions approach faculty performance assessment. The project aims to significantly enhance the overall management and understanding of faculty performance within the PUPQC, contributing to a more efficient and informed decision-making process.

To achieve this, the project outlines two key goals. Firstly, the project aims to Develop a Data-Driven System that goes beyond traditional approaches. This involves the design, development, and implementation of an advanced and sophisticated system capable of collecting and analyzing various facets of faculty information. Secondly, the project focuses on Enhancing Efficiency in the faculty performance review process. To streamline data collection, analysis, and reporting, saving administrators a significant amount of time and effort.

In essence, the Faculty Performance System project not only strives for technological advancement but also aims to create a transformative tool that empowers administrators, fosters continuous improvement, and elevates academic excellence within the PUPQC institution.

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**Significance and Relevance**

The Capstone Project - Faculty Performance System holds immense significance for Polytechnic University of the Philippines (PUPQC), Institution Head Administrators, Faculty Members, Students and Future Developers:

*PUPQC*, the Faculty Performance System - Capstone Project is vital for PUPQC as it ensures the maintenance of high academic standards. By implementing an effective performance evaluation system, the institutions can enhance the quality of education they provide. This, in turn, helps in attracting more students, improving the institution's reputation, and fostering a conducive learning environment.

*Institution Head Administrators*, for administrators this project offers valuable insights into faculty members' performance, enabling them to make informed decisions. By analyzing the data generated through the Faculty Performance System, administrators can identify areas of improvement, allocate resources efficiently, and develop targeted strategies for faculty development. This informed decision-making process contributes to the overall growth and effectiveness of the institution.

*Faculty Members*, is a significant part of the Faculty Performance System Capstone Project. Clear and objective performance evaluations provide constructive feedback, enabling educators to enhance their teaching methods and professional skills. Additionally, a transparent evaluation system promotes a sense of fairness and motivation among faculty members, encouraging them to excel in their roles and contribute positively to the institution's academic environment.

*University Students*, the direct beneficiaries of the Faculty Performance System as it ensures they receive high-quality education. When faculty members are evaluated and supported effectively, it leads to improved teaching methods, interactive learning experiences, and overall academic excellence. Consequently, students gain a better education, acquire

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valuable skills, and are better prepared for future endeavors, contributing to their personal and professional development.

*Future Developers*, for future developers and educational innovators, the Faculty Performance System serves as a valuable reference and foundation. By studying the project's outcomes and methodologies, they can gain insights into designing advanced performance evaluation systems, educational technologies, and tools to further enhance the learning experience. This knowledge empowers them to contribute to the evolution of education, ensuring continuous improvement in teaching methodologies and student outcomes.

**Structure of the Document**

I. INTRODUCTION: This section sets the stage for the comprehensive exploration of the Faculty Performance System (FPS), outlining the context, purpose, and significance of the study.

II. LITERATURE REVIEW: A thorough examination of existing literature providing a foundation for understanding the key concepts, methodologies, and technologies related to faculty performance evaluation systems.

III. METHODOLOGY: This section details the research methods and approaches employed to design, develop, and implement the FPS, ensuring a systematic and effective process.

IV. REQUIREMENTS ANALYSIS: The analysis phase focuses on identifying and documenting the functional and non-functional requirements essential for the FPS's successful development and operation.

V. BUSINESS PROCESS ARCHITECTURE: The business processes related to faculty performance evaluation are strategically outlined, emphasizing efficiency and alignment with institutional goals.

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VI. APPLICATION ARCHITECTURE: This section delves into the design and structure of the FPS application, encompassing modules and functionalities to meet the specified requirements.

VII. DATA ARCHITECTURE: The architecture for organizing, storing, and managing data within the FPS is outlined, ensuring secure and efficient data handling.

VIII. TECHNOLOGY ARCHITECTURE: This section discusses the technological framework adopted for FPS development, including programming languages and other relevant technologies.

IX. DEVELOPMENT PROCESS: The detailed process of transforming requirements into a functional FPS, covering planning, design, coding, and integration.

X. IMPLEMENTATION: This section explores the deployment of the FPS, ensuring a smooth transition from development to active use within the educational institution. XI. TESTING AND QUALITY ASSURANCE: The rigorous testing phase is outlined, emphasizing quality assurance measures to validate the FPS's functionality, reliability, and performance.

XII. RESULTS AND EVALUATION: The outcomes of the FPS implementation are assessed, measuring its effectiveness in enhancing faculty performance evaluation processes. XIII. CONCLUSION: A summary of key findings, implications, and potential future developments is provided, wrapping up the study on FPS implementation.

XIV. REFERENCES: This section lists the sources and references utilized throughout the study, ensuring academic integrity and providing avenues for further exploration.

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**II. Literature Review**

**Agile Scrum Methodology Overview**

The Agile Scrum methodology approach is organized into manageable releases. Sprint planning focuses on detailing the work for the upcoming sprint, followed by the implementation phase where development occurs. Daily Scrum for the Faculty Performance System involves a structured process, beginning with the definition of the project vision and goals. Release planning follows, where features prioritize meetings facilitate communication, while sprint reviews and retrospectives allow for stakeholder feedback and continuous improvement. The final step involves deployment of completed features. This approach ensures a flexible and transparent development process, delivering incremental value to stakeholders and promoting continuous enhancement of the Faculty Performance System.

**Enterprise Architecture Concepts**

The Faculty Performance System is designed using the Service-Oriented Architecture (SOA) as the enterprise architecture concept. SOA is a modular approach that encapsulates business processes into interoperable services, fostering flexibility, scalability, and reusability. The system's components can be organized into the following layers:

The system architecture is designed with several layers to cater to institution head administrators. The User Interface (UI) at the Presentation Layer prioritizes simplicity and user-friendliness, featuring a dashboard with key performance indicators and analytics tools. The Application Layer manages faculty data operations, including faculty evaluations, research achievements, and feedback. Real-time Tracking Service ensures continuous monitoring and updates faculty performance. The Business Layer encompasses logic components for data integrity and validation, while integration components facilitate communication between

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services. The Data Layer employs a centralized database for efficient querying and retrieval. The Infrastructure Layer utilizes cloud services for scalability and security services to safeguard sensitive faculty data. The Technology Layer involves selecting appropriate programming languages, a suitable Database Management System (DBMS), and frameworks for system development.

By adopting a Service-Oriented Architecture, the Faculty Performance System achieves modularity, maintainability, and scalability, aligning with the institution's long-term goals and evolving needs. These approaches allow for the independent development, deployment, and scaling of services, fostering a more agile and adaptable enterprise architecture.

**Relevant Studies and Research**

The literature review offers a comprehensive exploration of existing research and scholarly works related to the development and implementation of the Faculty Performance System. The synthesis of literature provided aims to establish a foundational understanding of key concepts, methodologies, and best practices, informing the design and effectiveness of the proposed Faculty Performance System.

In the article "Improving University Faculty Evaluations via Multi-view Knowledge Graph" published in Future Generation Computer Systems, Lin et al. (2021) highlight the transformative role of online tools and toolkits in providing university faculty members easy access to diverse data generated in e-learning environments for teaching and research purposes. The challenge arises in utilizing this wealth of e-learning data in a scientifically and practically sound manner for teacher evaluations within the university performance system. The study underscores the increasing importance of leveraging e-learning data to assess and enhance faculty performance in both research and teaching. Faculty members can efficiently gauge their strengths and weaknesses by analyzing data related to student participation, performance, and feedback. This

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information enables instructors to identify areas for improvement in instructional techniques and focus on enhancing effective teaching strategies. Through continuous self-reflection and adjustment informed by collected data, educators can elevate their overall effectiveness in teaching and research.

From the study of Evaluation of Overall Performance of Faculty Members by Using Self-Assessment Methods. As highlighted by Shah et al. (2020), the continuous assessment within education aims for a balanced expansion of qualitative and quantitative dimensions. The system's comprehensive review, including input, output, procedures, and outcomes, supports both performance assessment and professional development. Through constructive feedback, faculty members can identify strengths and areas for growth, enhancing their teaching abilities and overall effectiveness in their roles. This integration of self-assessment methodologies within the Faculty Performance System contributes to ongoing improvements in education quality and the continual development of faculty members. The Faculty Performance System incorporates self-assessment methods to evaluate the overall performance of faculty members, aligning with the dynamic and focused nature of every nation's education system.

The Faculty Performance System gains valuable insights from Leah T. Salas's (2019) study, which focuses on Evaluating the Faculty Performance Evaluation Systems of sSate Universities and Colleges in the Eastern Visayas region of the Philippines. The study is centered on addressing research questions pertaining to the existing and ideal faculty performance evaluation systems, considering standards of utility, feasibility, propriety, and accuracy. It delves into the evaluation procedures, instruments, and criteria employed in assessing faculty performance. Utilizing a descriptive-assessment study design, the research methodically explores these aspects, drawing responses from administrators, instructors, and students across the main campuses of state universities and colleges in the Philippine Eastern Visayas

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Region. The findings from this study contribute valuable insights to the ongoing enhancement and development of the Faculty Performance System.

The study on Faculty Performance Evaluation System with Application of Data Analytics, conducted by Rodelio O. Dela Fuentea and Romel O. Dela Fuentea (2020), focuses on the current evaluation process. It involves student form assessments, with Likert-scaled responses provided on printed sheets. Oversight of attendance and punctuality is managed by the human resources department, and college deans manually evaluate faculty performance based on administrative and classroom criteria, using manual computation for the overall assessment. The study highlights challenges in the existing system, including the distribution of a large number of evaluation forms prone to human error and potential compromises in record confidentiality. The exploration of Data Analytics aims to address these challenges, streamline the evaluation process, and enhance accuracy within the Faculty Performance System.

The exploration of Faculty Performance Evaluation within a Philippine University's Information Technology Program, as outlined by Rommel Verecio et al. (2017), delves into the long-standing practice of communicating academic performance evaluation results in public universities and colleges in the Philippines. Performance, defined as the accomplishment of known tasks assessed against predetermined standards of accuracy, completeness, speed, and efficiency, is a central focus. The study specifically assesses each faculty member's practices to ensure alignment with student expectations and program goals. Utilizing a descriptive research design, the study conducted during the second semester of the 2016–2017 academic year at Leyte Normal University's Bachelor of Science in Information Technology program aims to quantitatively describe this phenomenon. The findings contribute valuable insights to the ongoing development and refinement of the Faculty Performance System within the university's Information Technology Program.

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The study titled "The Scholar Plot: Design and Evaluation of an Information Interface for Faculty Research Performance" as presented in Frontiers in Research Metrics and Analytics by Majeti et al. (2020) emphasizes the critical importance of accurately assessing academic performance for purposes such as recognizing academic achievements, shaping academic policies, and promoting scientific research. The authors underscore the necessity of collecting precise and current data through increasingly automated internet interfaces to efficiently carry out these duties. Additionally, the study highlights the importance of removing biases, especially disciplinary biases, from the collected data. The presented information interface, known as the Scholar Plot, is designed to facilitate insightful examination at various levels, ensuring an accurate and impartial evaluation of academic accomplishments. The insights from this study contribute valuable perspectives to the ongoing refinement and development of the Faculty Performance System, particularly in the context of research performance assessment.

To address the persistent challenge of delayed evaluation results caused by a paper-based faculty performance evaluation system at the University of Nueva Caceres - College of Computer Studies (UNC - CCS), Trillanes-Reyes, Agnes A (2014) proposes the implementation of an Intranet-Based Faculty Performance Evaluation System. This system offers modules specifically designed for evaluating the teaching performance of faculty members. Notably, the evaluation process involves input from students, the faculty members themselves, peer faculty members, and the department dean of CCS. The system generates comprehensive reports with the evaluation results, providing a breakdown by individual faculty members. This Intranet-Based system facilitates a streamlined and efficient evaluation process, allowing students, faculty, and the dean to assess faculty performance using the designated evaluation modules integrated into the system. The proposed solution addresses the longstanding challenge of delayed evaluations and contributes to the ongoing enhancement of the Faculty Performance System at UNC - CCS.

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The implementation of the AMA Computer College Lipa Paperless Faculty Performance Evaluation System, aims to automate the calculation of pupils' cumulative performance ratings, generating an overall summary of reports and findings related to faculty members. Access to the results is restricted to relevant faculty members, administrators, and HR personnel. Additionally, students have the opportunity to provide remarks for each faculty member along with their ratings. Administrators have the responsibility of creating evaluator accounts, requiring a simple log-in process, and providing an option to update passwords if desired. The introduction of this paperless system not only streamlines the evaluation process but also enhances confidentiality and accessibility within the Faculty Performance System at AMA Computer College Lipa.

The investigation into the impact of weights on Faculty Performance Evaluations, as explored in the study titled "How do weights affect Faculty Performance Evaluations?" published in Sustainable Engineering and Innovation, delves into the common practice of evaluating university faculty members based on their performance in teaching, research, and service. Büyükdağlı and Yeralan (2020) emphasize that individual ratings in these areas are assigned specific weights, and these ratings are then combined to generate an overall score, enabling comparisons between faculty members. The study suggests that the total scores of individual faculty members, determined by blending their achievements with predefined weights, may have broader implications for the university. These scores can potentially influence institutional priorities and decisions regarding recognition or resource distribution, thereby impacting the course and direction of the larger university setting. The findings from this study contribute valuable insights to the ongoing refinement and development of the Faculty Performance System.

The examination of the predictability of faculty instructional performance through a Hybrid Prediction Model, as presented by Cagas et al. (2019), sheds light on the growing utilization of data mining tools in colleges and universities. The study emphasizes the

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significance of predicting faculty instructional effectiveness, a goal made achievable through the application of data mining algorithms. According to the authors, data mining has simplified this process, enhancing the accuracy and reliability of outcomes in forecasting faculty instructional success. The discussion delves into the technique of leveraging data mining in academic institutions to forecast faculty instructional effectiveness and gather insights about educational environments. This involves processing and evaluating extensive datasets, requiring the application of data analytics methods such as data mining. The study underscores the pivotal role of analytics in improving the precision and dependability of predictions when assessing faculty teaching performance in higher education institutions. The insights from this research contribute to the ongoing enhancement of the Faculty Performance System.

**Integration of Information Systems in Enterprise Environments**

Enterprise Application Integration (EAI) is used when FPS requires seamless integration with various enterprise-level systems such as the Faculty Information System (FIS) and Research Information System (RIS). EAI ensures that these various systems can work together seamlessly, allowing for smooth communication and data exchange.

Data integration is additionally utilized, which is critical because FPS requires the consolidation and synchronization of multiple data sources, such as teaching evaluations, research accomplishments, and student feedback. Data integration ensures that FPS can effectively collect, analyze, and present data from a variety of sources, resulting in a comprehensive view of faculty performance.

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**III. Methodology**

**Agile Scrum Methodology in the Project**

The Agile Scrum methodology in this capstone project follows an iterative approach, with each sprint building upon the progress of the previous ones. After deployment, the cycle repeats, with continuous feedback loops to refine and enhance the Faculty Performance System iteratively. By adopting this type of methodology, the Faculty Performance System can promote adaptability, transparency, and collaboration, enabling the team to respond effectively to changing requirements and deliver a valuable product incrementally.

Figure 1: Agile Scrum Methodology 27





1. Project Vision the objective here is to define the overall vision and goals of the Faculty Performance System. Collaboratively create a project vision statement, identify key stakeholders, and establish the high-level objectives for the system.

2. Release Planning, the objective here is to plan and prioritize feature releases based on project goals and stakeholder needs. Break down the project into manageable features, prioritize them, estimate effort, and create a release plan outlining feature delivery timelines.

3. Sprint Planning, the objective here is to plan the work for the upcoming sprint based on prioritized features from the release plan. Collaborate to define user stories, tasks, and acceptance criteria for the upcoming sprint. Estimate and commit to the work.

4. Implementation (Sprint Execution), the objective here is to develop and implement features based on the sprint plan. Daily development activities, regular communication among team members, and continuous integration of completed features.

5. Daily Scrum, the objective here is to facilitate communication, collaboration, and address potential roadblocks. Daily stand-up meetings to discuss progress, share updates, and identify any impediments.

6. Review, the objective here is to demonstrate completed features and gather feedback from stakeholders. Conduct a sprint review meeting to showcase the working software, receive feedback, and adjust priorities or features based on stakeholder input.

7. Retrospective, the objective here is to reflect on the sprint and identify opportunities for improvement. Hold a retrospective meeting to discuss what went well, what could be improved, and actionable items for enhancement in the next sprint.

8. Deployment, the objective here is to release the completed features to the production environment. Deploy the approved features to the live system, ensuring that the new functionalities are available to end-users.

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**Roles**

The development of Capstone Project - Faculty Performance System requires various roles that play crucial parts in ensuring the success of the project. Here's how each role contributes:

Product Owner, represents the stakeholders, including faculty and administrators, and communicates their needs and priorities to the development team. Defines and prioritizes features and functionalities for the Faculty Performance System based on the overall goals and requirements. Makes decisions regarding the project scope, features, and release timelines. Ensures that the end product meets the needs of the users and aligns with the organization's objectives.

Project Manager, facilitates the agile/scrum development process and ensures that the team follows the agreed-upon processes and practices. Removes impediments and obstacles that hinder the development team's progress. Helps the team to self-organize and collaborate effectively. Acts as a buffer between the team and external distractions, allowing the development team to focus on delivering value.

Development Team, actively participates in the development of the Faculty Performance System. Collaborates with the Product Owner to understand and implement user stories and requirements. Designs, codes, tests, documents and delivers software increments during each sprint. Engages in continuous improvement and adaptation to enhance productivity and product quality.

Quality Assurance Analyst, ensures that the Faculty Performance System meets specified quality standards and requirements. Develops and executes test plans, test cases, and test scripts to identify and report defects. Collaborates with the development team to address and resolve issues identified during testing. Participates in the definition of acceptance criteria for user stories and ensures that they are met.

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Business Analyst, serves as a crucial link between stakeholders and the development team. Responsibilities include gathering and documenting requirements, facilitating stakeholder communication, ensuring quality assurance aligns with requirements, contributing to continuous improvement, analyzing data sources, managing risks, and supporting user training.

Documentation, integral for maintaining transparency, facilitating effective communication, and ensuring systematic project management. This encompasses capturing and detailing requirements, documenting functional specifications and system design, creating user manuals, test cases, and change management documentation. In essence, thorough documentation supports the development, deployment, and maintenance of the Faculty Performance System.

**Team Roles in the Project**

| Team Members Roles |
| --- |
| Miguel Angel Y. Cantuja Quality Assurance |
| Rafael Jayson M. Logan Project Manager, Frontend Developer |
| John Vic A. Macusi Documentation |
| Daniel Jose D. Reyes Backend Developer |
| Angel Mae A. Taga-oc Business Analyst, Documentation |

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**Sprint Cycles**

Table 1: Faculty Performance System - Sprint 1

| Sprint 1 | | | | |
| --- | --- | --- | --- | --- |
| Timeline: August 28 to September 1 | | | | |
| Sprint Goal: Login Module | | | | |
| User  Story  Number | User Story | Task Acceptance Criteria/Task Assignee/s Remarks |  | Status |
| FPS -  001 | As a user, I  want to be  able to login and securely authenticate  myself on the system to  perform  authorized  actions. | Implement a secure  Login Module  Reyes  authentication system  TextField for Email  Logan  with password hashing  TextField for Password  and secure storage of  Checkbox - Remember Me  credentials.  TextButton - Log In  Design and develop a  Login Page  user login interface with  • users should input only their  validation for email and  valid Email and Password,  password.  system verifies the credentials  Implement the "Forgot  and grant access.  Password" functionality,  • users should get redirected to  including generating  the system home page if sign  and verifying password  in process is successful  reset tokens.  • If sign in process is failed the  system will display an error  message notifying the user for  wrong inputs.  Implement user session  management with  secure session storage  and expiration. | 2 | Done |
| 7 |
| 3 |
| 2 |

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Table 2: Faculty Performance System - Sprint 2

| Sprint 2 | | | | |
| --- | --- | --- | --- | --- |
| Timeline: August 28 to September 1 | | | | |
| Sprint Goal: Research Productivity Page | | | | |
| User Story Number | User Story | Assignee/  Task Acceptance Criteria/Task  s | Remark s | Status |
| FPS 4 | As a user, I want to track and  analyze the  number of  publications and research outputs per faculty  member, so that I can assess their productivity and contributions to the academic  community | Develop a Faculty  Research Productivity  Logan  Module UI  Module in the system are as  Reyes  follows:  • integration with research  information system  Develop a function  Logan  • user access to the system  system module fields  Reyes  that records overall;  allows faculty members  - Publications  to manage awards  - Overall Research  Perform function testing Cantuja Contributions  - Citation Metrics  • data must be statistically  presented  • categorization and filtering  options for research outputs  • user must have the ability  to view detailed information  Documentation  for specific research outputs.  Macusi  • search functionality to find  Tagaoc  specific research outputs. | 2 | Done |
| 7 |
| 3 |
| 2 |
| FPS 5 | As a user, I must be able to  measure the  citations and  impact of faculty research, as this will help me  evaluate the  quality and  influence of their work. | Develop a faculty  Research Productivity Page  Logan  achievements UI  • integration with research  Reyes  information system  • users are able to view  citation metrics for different  Develop a function for  Logan  categories such as;  faculty that Highlights  Reyes  - publications  accomplishments and  - authors  contributions  - research areas  Perform function testing Cantuja • system provide options to  filter and sort the citation  metrics based on specific  parameters such as;  - time period  - citation count  Documentation  Macusi  Tagaoc | 2 | Done |
| 5 |
| 2 |
| 2 |

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Table 3: Faculty Performance System - Sprint 3

| Sprint 3 | | | | |
| --- | --- | --- | --- | --- |
| Timeline: September 4 to September 8 | | | | |
| Sprint Goal: Teaching Effectiveness Module in the system and Progress monitoring for faculty development initiatives | | | | |
| User Story Number | User Story | Task Acceptance Criteria/Task Assignee/ s | Remarks | Status |
| FPS 13 | As a user, I want to track and  evaluate the  progress of  faculty members in achieving their development plan objectives. By  monitoring their advancements, I can assess the effectiveness of development  initiatives in  improving faculty performance. | Develop a Progress  Progress monitoring for  Logan  monitoring for faculty  faculty development  Reyes  development initiatives  initiatives are as follows:  UI  • integration with faculty  information system  • system displays  progress monitoring using  Integrate with the Faculty  a pie graph.  Information System (FIS)  • pie graph visually  and utilize analytics tools  represents the proportion  to recognize the  of progress for each  development initiatives  initiative such as  undertaken by each  - green: completed  faculty member.  - violet: workshops  Generate a pie chart to  - yellow: seminars  visually represent the  - red: trainings  distribution of progress.  Users should be able to  • user can view current  view, explore further  progress and the overall  details, and observe the  total trainings conducted  progress over specific  • user can drill down for  time periods.  more detailed information  on each initiative's  progress.  • user are able to see the  time period for displayed  Perform function testing Cantuja  progress with the overall  totals.  • system provides a  legend or key for  understanding the graph,  such as  Documentation Macusi - Completed  Tagaoc  - Workshops  - Seminars  - Trainings | 3 | Done |
| 5 |
| 5 |
| 4 |
| 5 |
| 5 |
| 4 |
| FPS 2 | As a user I must be able to access and view average evaluation scores for faculty | Develop a Teaching  Teaching Effectiveness  Logan  Effectiveness page  Module in the system are  Reyes  Module UI  as follows:  • integration with faculty  information system | 3 | Done |
| 3 |

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|  | members. That allows me to  assess the  teaching  effectiveness of the faculty within the institution. | Integrate with the Faculty  • on accessing the  Information System and  teaching effectiveness  employ analytics tools to  page, user must be able  recognize teaching  to see the total  effectiveness, presenting  percentages of;  the data through a graph.  - Average Institutional  Users should have the  Rate  capability to observe the  - Faculty Ratings:First  average evaluation score  Semester  and average student  - Faculty Ratings: Second  score for each faculty  Semester  member. Additionally,  users should be able to  • able to view average  identify both the lowest  evaluation score that is  and highest-rated faculty  presented in graphs and  members.  includes the following  data;  Perform function testing Cantuja - Supervisor Evaluation  - Student Evaluation  - Peer Evaluation  - Self Evaluation  Documentation Macusi Tagaoc  • for Average Students  Scores for Faculty, data is  presented in pie graph  that has indication of;  - Above Average  - Below Average  - Equal Average  • users are also able to  see the least and highest  rated faculty displayed in  numbers;  - High  - Average  - Least | 2 |  |
| --- | --- | --- | --- | --- |
| 2 |
| 2  3 |
| FPS 3 | As a user I must be able to track the trends in  teaching  effectiveness  scores over time to evaluate the overall progress and effectiveness of the faculty  members. | Develop a Teaching  Teaching Effectiveness  Logan  Effectiveness page UI  Page  Reyes  • integration with faculty  information system  • on accessing the  teaching effectiveness  page for trends in  Integrate with the faculty  teaching effectiveness  information system,  scores, users are able to  enabling users to  view the graphs  observe trends in  containing average  teaching effectiveness  ratings.  scores. Create a graph  displaying the average  • system offers search  ratings. Implement a  functionality to find | 3 | Done |
| 1 |
| 1 |
|  |

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|  |  | search function for users  specific data  to locate specific data.  • page for trends in  teaching effectiveness  scores also presents the  Perform function testing Cantuja following;  - Average Student Rating  Documentation Macusi - Performing Year  Tagaoc |  |  |
| --- | --- | --- | --- | --- |
| 2 |
| 2 |

Table 4: Faculty Performance System - Sprint 4

| Sprint 4 | | | | |
| --- | --- | --- | --- | --- |
| Timeline: October 16 to 28 | | | | |
| Sprint Goal: Professional Development, Attendance and Leave Analytics, Faculty Awards Recognition, Retention and Exit Insights | | | | |
| User story Number | User Story | Task Acceptance Criteria Assignees | Remark s | Status |
| FPS 7 | As a user, I must be able to track and monitor the attendance and  participation of faculty members in workshops,  seminars, and training  programs. This will allow me to gather valuable feedback from  faculty on the  effectiveness and relevance of  these  professional  development  activities. | Develop a view or page in  Professional  Logan  the system where  Development Module in  Reyes  authorized users can  the system are as  access and view the  follows:  workshop and seminar  attendance information.  • integration with faculty  information system  Add filters and search  Logan  options to the view,  Reyes  • users should be able  allowing users to search  to search and filter  for specific workshop or  attendance records  seminar attendance  based on specific  records  criteria.  Test the functionality to  • the system provides a  ensure that faculty  Cantuja  summary of faculty  members can input their  participation in  workshop and seminar  professional  attendance accurately  development activities  and that authorized users  in numbers  can view it correctly.  Documentation and user  Macusi  • an ongoing education  guides to help users  Tagaoc  and training program  understand the system  should have a separate  section among previous  programs.  • systems are able to  update faculty ongoing  education and training  records. | 2 | Done |
| 7 |
| 3 |
| 3 |

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| FPS 10 | As a user, I want to easily access and analyze  information about faculty members attendance  patterns and  leave utilization. This will allow me to make informed decisions about their request and effectively  manage  approvals | Develop a user interface  Faculty Attendance and  Logan  component for  Leave Request  Reyes  administrators or  Management follows;  authorized users to  • integration with faculty  review and manage leave  information system  requests, allowing them to  • administrators or  approve, reject, or  authorized users should  request further  be able to review and  information.  manage leave requests,  including  Implement functionality to  Logan  - approving  track and record  Reyes  - rejecting  approved leave requests,  - requesting further  ensuring the relevant  information.  details and comments are  stored accurately.  • the system should  Design and implement the  Logan  track and record  database schema to track  Reyes  approved leave  faculty attendance and  requests, including  time off, including  relevant details and  approved leave, sick  comments.  leave, personal days, and  • users should be able  other types.  to search and filter  Develop features to allow  Logan  approved leave  users to compare and  Reyes  requests based on  analyze attendance and  specific criteria.  time off statistics across  faculty members,  • the system tracks  departments, or specific  faculty attendance and  time periods.  time off including ;  Test the functionality to  Cantuja  - approved leave  ensure accurate  - sick leave  processing of leave  - personal days  requests, tracking of  - etc.  attendance and time off,  and accurate comparison  • Users should be able  and analysis of statistics.  to compare and analyze  Documentation and user  Macusi  attendance and time off  guides to help users  Tagaoc  statistics across faculty  understand the system  members, departments,  or time periods. | 3 | Done |
| --- | --- | --- | --- | --- |
| 6 |
| 10  8  4 |
| 3 |
| FPS 11 | As a user, I must be able to  evaluate the  impact of faculty awards and  recognition  performance.  This will enable me to identify  patterns and | Design and develop a  Faculty Awards and  Logan  user interface to  Recognition Impact in  Reyes  showcase faculty  the system are as  achievements.  follows:  • integration with faculty  Implement the backend  Logan  information system  functionality to retrieve  Reyes  • system displayed the  and display faculty  award and  achievements.  achievements using bar  graphs | 3 | Done |
| 10 |

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trends in their performance and assess the

effectiveness of these honors in promoting

excellence in research and teaching.

Define the types of

achievements to be displayed, such as

research publications, awards, grants,

presentations, or

community contributions. Enable sorting and

ordering options for faculty achievements.

Ensure data privacy and security measures are in place.

Test the faculty

achievements, display functionality and gather user feedback.

Document the process for displaying faculty

achievements.

• bar height

corresponds to the magnitude or

significance of the

achievement.

• user can drill down for more detailed

information on each faculty achievement. • each bar represents a specific

accomplishment or contribution, such as - Blue: Project

Contribution

- Green: Performance Impact

- Red: Recognized Faculties

• system provides

statistics labels or

tooltips to describe each bar and its

achievement, follows as - Faculties with High Recognition Score - Faculties with High Evaluation Score

- Number of Eligible Awardee

- Faculty Working Hours

Logan Reyes

Logan Reyes

Logan Reyes

Cantuja

Macusi Tagaoc

| 4 |
| --- |
| 4 |
| 1 |
| 3 |

2

Table 5: Faculty Performance System - Sprint 5

| Sprint 5 | | | | | |
| --- | --- | --- | --- | --- | --- |
| Timeline: October 30 to November 11 | | | | | |
| Sprint Goal: Merit and Promotion Progress and Feedback and Communication | | | | | |
| User storyNumber | User Story | Task | Acceptance Criteria Assignees | Remarks /Hours | Status |
| FPS 8  FPS 9 | As a user, I must be able to view  faculty members' performances  within the university and determine if the requirements for merit awards and promotions are | Develop a data  collection system for faculty performance metrics. | Merits Awards and  Logan  Promotion to assess  Reyes  faculty eligibility and  suitability for promotion.  • integration with faculty  information system  • the defined criteria  should consider factors  such as ; | 1 | Done |

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|  | met.  As a user, I must be able to  determine the  faculty members eligibility and  suitability for  promotion within the university. | Integrate analytics tools to identify  performance trends over multiple years. | - teaching effectiveness  Logan  - research productivity  Reyes  - professional  development.  • users should be able to  Logan  customize the weightage  Reyes  or importance of each  criterion in the evaluation  process.  • a mechanism for  Logan  assessing faculty eligibility  Reyes  and suitability for  promotions based on the  Cantuja  defined criteria.  • users should be able to  show and track faculty  performance data, such  as;  Macusi  - teaching evaluations  Tagaoc  - research outputs  - service records  • The system displays the  overall assessment  results, indicating the  faculty member's eligibility  or suitability for  promotions. | 4 |  |
| --- | --- | --- | --- | --- | --- |
| Create a workflow system for consistent and fair performance review processes. | 3 |
| Test the functionality to ensure accurate evaluation, outputs, and display records  Documentation | 4  5 |

Table 6: Faculty Performance System - Sprint 6

| Sprint 6 | | | | | |
| --- | --- | --- | --- | --- | --- |
| Timeline: November 11 to November | | | | | |
| Sprint Goal: Merits Awards and Promotion and Workload Allocation and Workload Balance | | | | | |
| User  story  Number | User Story | Task | Acceptance Criteria Assignee s | Remarks/ Hours | Status |
| FPS 8  FPS 9 | As a user, I must be able to view faculty members' performances  within the  university and  determine if the requirements for merit awards and promotions are | Develop a data  collection system for faculty  performance  metrics. | Merits Awards and Promotion to  Logan  assess faculty eligibility and  Reyes  suitability for promotion.  • integration with faculty  information system  • the defined criteria should  Logan  consider factors such as ;  Reyes  - teaching effectiveness  - research productivity  - service contributions |  | Done |
| Integrate analytics tools to identify  performance trends over multiple years. |  |

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|  | met.  As a user, I must be able to  determine the  faculty members eligibility and  suitability for  promotion within the university. | Create a workflow system for  consistent and fair performance review processes. | - professional development.  Logan  Reyes  • users should be able to  customize the weightage or  importance of each criterion in  the evaluation process.  Logan  • a mechanism for assessing  Reyes  faculty eligibility and suitability for  promotions based on the defined  Cantuja  criteria.  • users should be able to show  Macusi  and track faculty performance  Tagaoc  data, such as;  - teaching evaluations  - research outputs  - service records  • the system displays the overall  assessment results, indicating  the faculty member's eligibility or  suitability for promotions. |  |  |
| --- | --- | --- | --- | --- | --- |
| Test the  functionality to  ensure accurate evaluation, outputs, and display records |  |
|  |
| Documentation |  |
| FPS 10 | As a user, I want to easily access and analyze  information about faculty members' attendance  patterns and leave utilization. This will allow me to make informed decisions about their request and effectively  manage approvals | Develop a user  interface  component for  administrators or authorized users to review and manage leave requests,  allowing them to approve, reject, or request further  information. | Faculty Attendance and Leave  Logan  Request Management follows;  Reyes  • integration with faculty  information system  • administrators or authorized  users should be able to review  and manage leave requests,  including  - approving  - rejecting  - requesting further information.  Logan  • the system should track and  Reyes  record approved leave requests,  including relevant details and  comments.  • users should be able to search  and filter approved leave  requests based on specific  criteria.  Logan  Reyes  • the system tracks faculty  attendance and time off, including  ;  - approved leave  - sick leave  - personal days  - etc.  • users should be able to  compare and analyze attendance | 3 | Done |
| Implement  functionality to track and record  approved leave  requests, ensuring the relevant details and comments are stored accurately. | 6 |
| Design and  implement the  database schema to track faculty  attendance and  time off, including approved leave, sick leave, personal days, and other  types. | 10 |

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| FPS 12 | As a user, I must be able to evaluate the workload  balance and  fairness among the faculty  members.  Ensuring that all faculty members assigned tasks are aligned with their expertise and  abilities. | Develop features to allow users to  compare and  analyze attendance and time off  statistics across faculty members, departments, or  specific time  periods. | and time off statistics across  Logan  faculty members, departments, or  Reyes  time periods.  Cantuja  Macusi  Tagaoc  Workload Allocation and  Workload Balance are as follows:  • integration with faculty  information system  • workload allocation should  consider factors such as;  - faculty expertise  Logan  - availability  Reyes  - contractual obligations  • the system should track and  record the assigned workload for  each faculty member, including ;  Logan  - specific tasks  Reyes  - time commitments.  • users should be able to search  and filter workload allocation  based on specific criteria.  Logan  • the system should display  Reyes  workload allocation in a  statistically meaningful way to  visually represent the distribution  of tasks among faculty members.  • workload balance is calculated  and displayed in the system, | 8 | Done |
| --- | --- | --- | --- | --- | --- |
| Test the  functionality to  ensure accurate processing of leave requests, tracking of attendance and time off, and  accurate  comparison and analysis of  statistics.  Documentation and user guides to help users understand the system  Develop a UI for Workload Allocation that could see the record and  workload for each faculty | 4  3  3 |
| The system needs to monitor and  document the  allocated workload for every faculty member. | 4 | Done |
| The system must have the capability to search and filter workload  allocations based on specific criteria. | 5 | Done |
| The system should be able to assess and analyze  workload balance statistics across departments or  faculty categories. | 10 | Done |

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|  |  | Conduct thorough testing, including usability and  security testing | ensuring an equitable distribution  Macusi  of workload.  • workload balance statistics  should consider factors such as ;  Tagaoc  - teaching hours  Macusi  - research commitments  - service responsibilities  - other workload components.  • users should be able to  compare and analyze workload  balance statistics across  departments or faculty  categories. | 2 | Done |
| --- | --- | --- | --- | --- | --- |
| Documentation | 5 | Done |

Table 7: Faculty Performance System - Sprint 7

| Sprint 7 | | | | | |
| --- | --- | --- | --- | --- | --- |
| Timeline: November 27 to December 9 | | | | | |
| Sprint Goal: Faculty Profile Management | | | | | |
| User story Number | User Story | Task Acceptance Criteria | Assignees | Remarks Status |  |
| FPS 14 | As a user, I want to be able to  access and view each faculty's  Basic details in the system. | Develop a faculty  Faculty Profile Management  profile management  • Faculty Profile  module in the system  Management Dashboard  sidebar  user can view List of Faculty  On the faculty profile  Members their  management page or  - Faculty Name  module, organize  - Faculty Type  - Actions  each faculty member  in a list format.  in the dashboard also it has  Clicking the  Search Funtionality  performance button  should expand the  • user can click on specific  view to reveal their  faculty member listed  in a clicable Performance,  concise details,  and upon clicking, it will  contributions, and  expand  overall performance  to display their brief details  within that specific  and overall performance  module.  within this module  Test the functionality  •users can view the  personal details of each  Documentation and  faculty,  user guides to help  which include  - Last Name  users understand the  - First Name  system  - Middle Name | Logan  Reyes | 2 | Done |
| Logan  Reyes | 7 | Done |
| Cantuja  Macusi  Tagaoc | 3  5 | Done  Done |

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| FPS 15  FPS 16 | As a user, I want to be able to  access and view each faculty Data table and the  characteristic  As a user, I want to be able to see in the dashboard the analytics of  overall module performance | Develop a faculty  - General Performance  Status  management profile  module in the system  • Presented as in a manner  sidebar  similar to every  In the faculty profile  module analytics, providing  an overall  management page or  faculty overview that  module create a each  encompasses  faculty member in a  clickable box, and  - Overall Evaluation  upon clicking, it will  Performance  expand  - Academic Head Rating  to display their overall  - Self Rating  - Director Rating  performance within  - Student Rating  this module  Categories for 1st sem and  Test the functionality  2nd sem  - Present Evaluation  Documentation and  Percentage  - Research Performance  user guides to help  users understand the  system  Develop a Dashboard  Dashboard Module:  module in the system  • Within the top bar of the  have a top bar  dashboard, users will find  the following options:  - Faculty Management  - Evaluation  - Research & Publication  Merit & Promotion  Within the Dashboard  - Awards and Recognition  module, establish a  - Professional Development  top bar featuring  And more  faculty analytics for  Clicking on More modules  each page. Upon  will reveal additional  clicking, users will  options, such as:  access a table  - Workload Distribution  displaying  - Leave Management  comprehensive  Beneath this, the dashboard  analytics for all faculty  displays the Faculty Type  members. The page is  and the user's name.  scrollable, allowing  users to view analytics  • In the dashboard, users  for every module as  should have visibility into:  they scroll.  - Average Institutional  Rating  - Total Research Products  - Awarded Faculties  - Successful Trainings  - Reduced Workloads  • Upon scrolling, users will  see or encounter:  - Present Academic Year | Logan  Reyes | 4 | Done |
| --- | --- | --- | --- | --- | --- |
| Logan  Reyes | Done |
| Logan  Reyes | 5 | Done |
| Logan  Reyes | Done |
| Cantuja | 3 | Done |
| Macusi  Tagaoc  Logan  Reyes | 5  2 | Done  Done |
| Logan  Reyes | 4 |

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|  |  | Test the system to  Faculty Evaluation Results  ensure all the  - Research Productivity  performance of all  - Workload Distribution  faculty will visible to  - Professional Development  the user  - Awards and Recognition  Impact  Each of these elements has  its own clickable modal,  directing users to their  respective pages.  Documentation and  user guides to help  users understand the  system | Cantuja | 3 |  |
| --- | --- | --- | --- | --- | --- |
| Macusi  Tagaoc | 5 |

Table 8: Faculty Performance System - Sprint 8

| Sprint 8 | | | | |
| --- | --- | --- | --- | --- |
| Timeline: January 2 to 8 | | | | |
| Sprint Goal: Report and Print Functionality | | | | |
| User story Number | User Story | Task Acceptance Criteria Assignee s | Remark s/Hours | Status |
| FPS 17 | As a user, I must be able to print  everything  contained in | Develop a print button  "Research Productivity  Logan  aligned to the upper  Page - Printing  Reyes  right corner  • The user will be able to  print everything included | 2 | Done |
|  | Evaluation module | Add functionality to the  Logan  on the page, which  button to allow printing  Reyes  encompasses:  of the entire Research  and Productivity  - Date  dashboards.  - Time  • The graph illustrating  the Average Rating | 5 | Done |

Based on Faculty

Test the functionality

3 Done

Performance

Cantuja

Development in

Research Methodologies

- Present Academic

University Research

Goals

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|  |  | Documentation and user  - Analytical Research  Macusi  guides to help users  Bound and Published  Tagaoc  understand the system  Over Years" | 3 | Done |
| --- | --- | --- | --- | --- |
| FPS 18 | As a user, I must be able to print  everything  contained in | Develop a print button  Evaluation Module -  Logan  aligned to the upper  Printing  Reyes  right corner  • The user will be able to  print everything included | 2 | Done |
|  | Research and  Publication module | Add functionality to the  Logan  on the page, which  button to allow printing  Reyes  encompasses:  of the entire Evaluation  dashboards.  - Date  - Time | 5 | Done |

Test the functionality

Cantuja

• The graph illustrating the Average Rating

3 Done

Documentation and user guides to help users understand the system

Based on Faculty

Performance

Development in

Research Methodologies - Present Academic University Research Goals

- Analytical Research Bound and Published Over Years

Macusi Tagaoc

3 Done 44



**Scrum Artifacts**

Table 9: Faculty Performance System - Product Backlogs

| User Story Number | User Story | Acceptance Criteria Priority/Sprint Backlog | Sprint  Status |
| --- | --- | --- | --- |
| FPS 1 | • User Authentication  As a user, I want to be able to login and securely  authenticate myself on the system to perform authorized actions.  Email  Password  Login  Forgot Password | Login Module  1  TextField for Email  TextField for Password  Checkbox - Remember Me  TextButton - Log In  TextButton - Forgot Password  Login Page  • users should input only their valid  Email and Password, system verifies  the credentials and grant access.  • users should get redirected to the  system home page if sign in process  is successful  • If the sign in process is failed the  system will display an error message  notifying the user for wrong inputs.  Forgot Password  • users can manage their lost  password by clicking on the forgot  password option. | Done |
| FPS 2 | As a user I must be able to access and view average evaluation scores for faculty members. That allows me to assess the teaching  effectiveness of the faculty within the institution. | Teaching Effectiveness Module in the  3  system are as follows:  • integration with faculty information  system  • on accessing the teaching  effectiveness page, user must be able  to see the total percentages of;  - Average Institutional Rate  - Faculty Ratings:First Semester  - Faculty Ratings: Second Semester  • able to view average evaluation  score that is presented in graphs and  includes the following data;  - Supervisor Evaluation  - Student Evaluation  - Peer Evaluation  - Self Evaluation  • for Average Students Scores for  Faculty, data is presented in pie graph  that has indication of; | Done |

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|  |  | - Above Average  - Below Average  - Equal Average  • users are also able to see the least  and highest rated faculty displayed in  numbers;  - High  - Average  - Least |  |
| --- | --- | --- | --- |
| FPS 3 | As a user I must be able to track the trends in teaching effectiveness scores over time to evaluate the overall progress and effectiveness of the faculty members. | Teaching Effectiveness Page  3  • integration with faculty information  system  • On accessing the teaching  effectiveness page for trends in  teaching effectiveness scores, users  are able to view the graphs containing  average ratings.  • system offers search functionality to  find specific data  • page for trends in teaching  effectiveness scores also presents the  following;  - Average Student Rating  - Performing Year | Done |
| FPS 4 | As a user, I want to track and analyze the number of  publications and research outputs per faculty member, so that I can assess their productivity and contributions to the academic community | Research Productivity Module in the  2  system are as follows:  • integration with research information  system  • user access to the system that  records overall;  - Publications  - Conferences  - Overall Research Contributions  - Grant and Funding Management  - Citation Metrics  • data must be statistically presented  • categorization and filtering options  for research outputs  • users must have the ability to view  detailed information for specific  research outputs.  • search functionality to find specific  research outputs. | Done |
| FPS 5 | As a user, I must be able to measure the citations and impact of faculty research, as this will help me evaluate the quality and influence of their | Research Productivity Page  2  • integration with research information  system  • users are able to view citation  metrics for different categories such | Done |

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|  | work. | as;  - publications  - authors  - research areas  • system provide options to filter and  sort the citation metrics based on  specific parameters such as;  - time period  - citation count |  |
| --- | --- | --- | --- |
| FPS 6 | As a user, I must be able to monitor the success rate of faculty members in securing research grants and funding, as this will indicate their ability to attract external resources and support for their projects. | Research Productivity Page  2  • integration with research information  system  • the system has reporting feature that  displays the success rate of faculty  members in securing research grants  and funding in terms of the following  - Personal Grants  - Fellowship  - Crowdfunding  • the system allow filtering and sorting  options to view the success rate of  faculty members based on different  criteria, such as  - department  - research area  - academic rank.  • The system should provide the ability  to view historical data and track  changes in the success rate over time,  allowing for comparisons and trend  analysis. | Done |
| FPS 7 | As a user, I must be able to track and monitor the  attendance and participation of faculty members in  workshops, seminars, and training programs. This will allow me to gather valuable feedback from faculty on the effectiveness and relevance of these professional  development activities. | Professional Development Module in  4  the system are as follows:  Workshop, Seminar Attendance, and  Faculty Participations on educational  programs:  • integration with faculty information  system  • seminar attendance records include  details such as;  - event name  - date  - time  - duration  - location of the workshop or seminar  - overall faculty attendees | Done |

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|  |  | • users should be able to search and  filter attendance records based on  specific criteria.  • the system provides a summary of  faculty participation in professional  development activities in numbers  • an ongoing education and training  program should have a separate  section among previous programs.  • systems are able to update faculty  ongoing education and training  records. |  |
| --- | --- | --- | --- |
| FPS 8  FPS 9 | As a user, I must be able to view faculty members'  performances within the university and determine if the requirements for merit awards and promotions are met. As a user, I must be able to determine the faculty  members eligibility and  suitability for promotion within the university. | Merits Awards and Promotion to  5  assess faculty eligibility and suitability  for promotion.  • integration with faculty information  system  • the defined criteria should consider  factors such as ;  5  - teaching effectiveness  - research productivity  - service contributions  - professional development.  • users should be able to customize  the weightage or importance of each  criterion in the evaluation process.  • a mechanism for assessing faculty  eligibility and suitability for promotions  based on the defined criteria.  • users should be able to show and  track faculty performance data, such  as;  - teaching evaluations  - research outputs  - service records  • The system displays analytics and  the overall assessment results,  indicating the faculty member's  eligibility or suitability for promotions. | Done  Done |
| FPS 10 | As a user, I want to easily access and analyze  information about faculty members' attendance  patterns and leave utilization. This will allow me to make informed decisions about their request and effectively | Faculty Attendance and Leave  4  Request Management follows;  • integration with faculty information  system  • administrators or authorized users  should be able to review and manage  leave requests, including  - approving | Done |

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|  | manage approvals | - rejecting  - requesting further information.  • the system should track and record  approved leave requests, including  relevant details and comments.  • users should be able to search and  filter approved leave requests based  on specific criteria.  • the system tracks faculty attendance  and time off, including ;  - approved leave  - sick leave  - personal days  - etc.  • Users should be able to compare  and analyze attendance and time off  statistics across faculty members,  departments, or time periods. |  |
| --- | --- | --- | --- |
| FPS 11 | As a user, I must be able to evaluate the impact of faculty awards and recognition  performance. This will enable me to identify patterns and trends in their performance and assess the effectiveness of these honors in promoting excellence in research and teaching. | Faculty Awards and Recognition  4  Impact in the system are as follows:  • integration with faculty information  system  • system displayed the award and  achievements using bar graphs  • bar height corresponds to the  magnitude or significance of the  achievement.  • users can drill down for more  detailed information on each faculty  achievement.  • each bar represents a specific  accomplishment or contribution, such  as  - Blue: Project Contribution  - Yellow: Performance Impact  - Green: Recognized Faculties  • system provides statistics labels or  tooltips to describe each bar and its  achievement, follows as  - Faculties with High Recognition  Score  - Faculties with High Evaluation Score  - Number of Eligible Awardee  - Faculty Working Hours | Done |
| FPS 12 | As a user, I must be able to evaluate the workload  balance and fairness among the faculty members.  Ensuring that all faculty | Workload Allocation and Workload  6  Balance are as follows:  • integration with faculty information  system  • workload allocation should consider | Done |

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| FPS 13 | members assigned tasks are aligned with their expertise and abilities.  As a user, I want to track and evaluate the progress of faculty members in achieving their development plan  objectives. By monitoring their advancements, I can assess the effectiveness of  development initiatives in improving faculty  performance. | factors such as;  - faculty expertise  - availability  - contractual obligations  • the system should track and record  the assigned workload for each faculty  member, including ;  - specific tasks  - time commitments.  • users should be able to search and  filter workload allocation based on  specific criteria.  • the system should display workload  allocation in a statistically meaningful  way to visually represent the  distribution of tasks among faculty  members.  • workload balance is calculated and  displayed in the system, ensuring an  equitable distribution of workload.  • workload balance statistics should  consider factors such as ;  - teaching hours  - research commitments  - service responsibilities  - other workload components.  • Users should be able to compare  and analyze workload balance  statistics across departments or  faculty categories.  Progress monitoring for faculty  3  development initiatives are as follows:  • integration with faculty information  system  • system displays progress monitoring  using a pie graph.  • pie graph visually represents the  proportion of progress for each  initiative such as  - green: completed  - violet: workshops  - yellow: seminars  - red: trainings  • user can view current progress and  the overall total trainings conducted  • users can drill down for more  detailed information on each  initiative's progress.  • users are able to see the time period  for displayed progress with the overall  totals. | Done |
| --- | --- | --- | --- |

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|  |  | • system provides a legend or key for  understanding the graph, such as  - Completed  - Workshops  - Seminars  - Trainings |  |
| --- | --- | --- | --- |
| FPS 14 | As a user, I want to be able to access and view each  faculty's Basic details in the system. | Faculty Profile Management  7  • Faculty Profile Management  Dashboard user can view List of  Faculty Members their  - Faculty Name  - Faculty Type  - Actions  in the dashboard also it has Search  7  Functionality  • user can click on specific faculty  member listed  in a clickable Performance, and upon  clicking, it will expand to display their  brief details and overall performance  within this module  •users can view the personal details of  each faculty,  which include  - Last Name  - First Name  - Middle Name  - Faculty Department  • Presented as in a manner similar to  every  module analytics, providing an overall  faculty overview that encompasses  - Performance Rating  - Research Productivity  - Service Contributions  - Teaching Effectiveness | Done |
| FPS 15 | As a user, I want to be able to access and view each  faculty's overall performance in the system. | Done |
| FPS 16 | As a user, I want to be able to see in the dashboard the analytics of overall module performance | Dashboard Module:  7  • Within the top bar of the dashboard,  users will find the following options:  - Faculty Management  - Evaluation  - Research & Publication  - Merit & Promotion  - Awards and Recognition  - Professional Development  And more  Clicking on More modules will reveal  additional options, such as:  - Workload Distribution  - Leave Management | Done |

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|  |  | Beneath this, the dashboard displays  the Faculty Type and the user's name.  • In the dashboard, users should have  visibility into:  - Average Institutional Rating  - Total Research Products  - Awarded Faculties  - Successful Trainings  - Reduced Workloads  • Upon scrolling, users will see or  encounter:  - Present Academic Year Faculty  Evaluation Results  - Research Productivity  - Workload Distribution  - Professional Development  - Awards and Recognition Impact  Each of these elements has its own  clickable modal, directing users to  their respective pages. |  |
| --- | --- | --- | --- |
| FPS 17 | As a user, I must be able to print everything contained in Evaluation module | Research Productivity Page - Printing  8  • The user will be able to print  everything included on the page,  which encompasses:  - Date  - Time  • The graph illustrating the Average  Rating Based on Faculty Performance  Development in Research  Methodologies  - Present Academic University  Research Goals  - Analytical Research Bound and  Published Over Years | Done |
| FPS 18 | As a user, I must be able to print everything contained in Research and Publication module | Evaluation Module - Printing  8  • The user will be able to print  everything included on the page,  which encompasses:  - Date  - Time  • The graph illustrating the Average  Rating Based on Faculty Performance  Development in Research  Methodologies  - Present Academic University  Research Goals  - Analytical Research Bound and  Published Over Years | Done |

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Table 10: Faculty Performance System - Sprint Backlogs

| Sprint Backlogs | | | | |
| --- | --- | --- | --- | --- |
| User Story  Number | User Story | Task Acceptance Criteria | Priority  Sprint  Backlog  Status | Remarks |
| FPS 1 | • User  Authentication As a user, I want to be able to  login and  securely  authenticate  myself on the  system to  perform  authorized  actions.  Email  Password  Login  Forgot Password | Implement a  Login Module  secure  TextField for Email  authentication  TextField for Password  system with  Checkbox - Remember  password hashing  Me  and secure storage  TextButton - Log In  of credentials.  TextButton - Forgot  Password  Design and  develop a user  Login Page  login interface with  • users should input only  validation for email  their valid Email and  and password.  Password, system verifies  Implement the  the credentials and grant  "Forgot Password"  access.  functionality,  • users should get  including  redirected to the system  generating and  home page if sign in  verifying password  process is succesful  reset tokens.  • If sign in process is  Implement user  failed the system will  session  display an error message  management with  notifying the user for  secure session  wrong inputs.  storage and  expiration.  Handle errors and  log any  authentication-relat  ed issues for  further  investigation.  Test the  authentication and  login functionality,  including unit tests  and user  acceptance testing.  Document the  authentication  process for future  reference and  maintenance. | 1 Done | 5 |
| 1 |
| 3 |
| 4 |
| 5 |
| 2 |
| 2 |
| FPS 2 | As a user I must be able to  access and view average | Develop a system  Teaching Effectiveness  to track and  Module in the system are  analyze teaching  as follows:  effectiveness  • integration with faculty | 3 Done | 2 |

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|  | evaluation  scores for faculty members. That allows me to  assess the  teaching  effectiveness of the faculty within the institution. | metrics for faculty  information system  members.  • on accessing the  teaching effectiveness  Include features  page, user must be able  such as average  to see the total  student evaluation  percentages of;  scores, comparison  - Average Institutional  against  Rate  departmental or  - Faculty Ratings:First  institutional  Semester  averages, and  - Faculty Ratings: Second  monitoring trends  Semester  over time.  Createa  • able to view average  user-friendly  evaluation score that is  interface for data  presented in graphs and  entry and  includes the following  management.  data;  - Supervisor Evaluation  - Student Evaluation  - Peer Evaluation  - Self Evaluation  • for Average Students  Scores for Faculty, data is  presented in pie graph  that has indication of;  - Above Average  - Below Average  - Equal Average  • users are also able to  see the least and highest  rated faculty displayed in  numbers;  - High  - Average  - Least |  |  |
| --- | --- | --- | --- | --- |
| 7 |
| 2 |
| FPS3 | Asa user I must be able to track the trends in  teaching  effectiveness  scores over time to evaluate the overall progress and  effectiveness of the faculty  members. | Implement  Teaching Effectiveness  algorithms to  Page  calculate average  • integration with faculty  scores and  information system  compare  • On accessing the  performance  teaching effectiveness  against averages.  page for trends in  teaching effectiveness  Documentation and  scores, users are able to  user guides to help  view the graphs  users understand  containing average  the system  ratings.  • system offers search | 9 |
| 3 |

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|  |  | functionality to find  specific data  • page for trends in  teaching effectiveness  scores also presents the  following;  - Average Student Rating  - Performing Year |  |  |
| --- | --- | --- | --- | --- |
| FPS 4 | As a user, I want to track and  analyze the  number of  publications and research outputs per faculty  member, so that I can assess  their productivity and  contributions to the academic community | Develop statistical  Research Productivity  presentation  Module in the system are  features to display  as follows:  research data in a  • integration with research  visually appealing  information system  and informative  • user access to the  manner  system that records  overall;  Implement  - Publications  categorization and  - Conferences  filtering options for  - Overall Research  research outputs,  Contributions  allowing users to  - Grant and Funding  filter publications,  Management  conferences, and  - Citation Metrics  overall research  contributions based  • data must be statistically  on specific  presented  categories or  • categorization and  criteria.  filtering options for  research outputs  • users must have the  ability to view detailed  information for specific  research outputs.  • search functionality to  find specific research  outputs. | 2 Done | 5 |
| 2 |
| FPS 5 | As a user, I must be able to  measure the  citations and  impact of faculty research, as this will help me  evaluate the  quality and  influence of their work. | Implement the  Research Productivity  ability to export or  Page  download research  • integration with research  outputs, enabling  information system  users to save or  • users are able to view  share research  citation metrics for  data in various  different categories such  formats, such as  as;  PDF or CSV.  - publications  - authors  - research areas  • system provide options  to filter and sort the  citation metrics based on | 1 |

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|  |  | specific parameters such  as;  - time period  - citation count |  |  |
| --- | --- | --- | --- | --- |
| FPS 6 | As a user, I must be able to  monitor the  success rate of faculty members in securing  research grants and funding, as this will indicate their ability to  attract external resources and support for their projects. | Test the  Research Productivity  functionality of the  Page  research  • integration with research  publications system  information system  thoroughly  • the system has reporting  feature that displays the  Document the  success rate of faculty  process for using  members in securing  and navigating the  research grants and  research  funding in terms of the  publications in the  following  system  - Personal Grants  - Fellowship  - Crowdfunding  • the system allow filtering  and sorting options to  view the success rate of  faculty members based on  different criteria, such as  - department  - research area  - academic rank.  • The system should  provide the ability to view  historical data and track  changes in the success  rate over time, allowing for  comparisons and trend  analysis. | 2 |
| 2 |
| FPS 7 | As a user, I must be able to track and monitor the attendance and  participation of faculty members in workshops, seminars, and training  programs. This will allow me to gather valuable feedback from  faculty on the effectiveness  and relevance of | Develop a view or  Professional Development  page in the system  Module in the system are  where authorized  as follows:  users can access  and view the  Workshop, Seminar  workshop and  Attendance, and Faculty  seminar  Participations on  attendance  educational programs:  information.  • integration with faculty  Add filters and  information system  search options to  • seminar attendance  the view, allowing  records include details  users to search for  such as;  specific workshop  - event name  or seminar  - date  attendance records | 4 Done | 2 |
| 5 |

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|  | these  professional  development  activities. | Test the  - time  functionality to  - duration  ensure that faculty  - location of the workshop  members can input  or seminar  their workshop and  - overall faculty attendees  seminar  attendance  • users should be able to  accurately and that  search and filter  authorized users  attendance records based  can view it  on specific criteria.  correctly.  • the system provides a  summary of faculty  Documentation and  participation in  user guides to help  professional development  users understand  activities in numbers  the system  • an ongoing education  and training program  should have a separate  section among previous  programs.  • system are able to  update faculty ongoing  education and training  records. |  | 2 |
| --- | --- | --- | --- | --- |
| 2 |
|  | FPS 8/FPS 9 As a user, I must be able to view faculty members' performances within the  university and determine if the requirements for merit awards  and promotions are met.  As a user, I must be able to  determine the faculty members eligibility and  suitability for  promotion within the university. | Develop a data  Merits Awards and  collection system  Promotion to assess  for faculty  faculty eligibility and  performance  suitability for promotion.  metrics.  • integration with faculty  information system  Integrate analytics  • the defined criteria  tools to identify  should consider factors  performance trends  such as ;  over multiple years.  - teaching effectiveness  Create a workflow  - research productivity  system for  - professional  consistent and fair  development.  performance  review processes.  • users should be able to  Test the  customize the weightage  functionality to  or importance of each  ensure accurate  criterion in the evaluation  evaluation, outputs,  process.  and display records  • a mechanism for  Documentation  assessing faculty eligibility  and suitability for  promotions based on the  defined criteria.  • users should be able to  show and track faculty  performance data, such | 5  Done | 1 |
| 4 |
| 3 |
| 4 |
| 5 |

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|  |  | as;  - teaching evaluations  - research outputs  - service records  • The system displays the  overall assessment  results, indicating the  faculty member's eligibility  or suitability for  promotions. |  |  |
| --- | --- | --- | --- | --- |
| FPS 10 | As a user, I want to easily access and analyze  information  about faculty  members'  attendance  patterns and  leave utilization. This will allow me to make  informed  decisions about their request and effectively  manage  approvals | Develop a user  Faculty Attendance and  interface  Leave Request  component for  Management follows;  administrators or  • integration with faculty  authorized users to  information system  review and manage  • administrators or  leave requests,  authorized users should  allowing them to  be able to review and  approve, reject, or  manage leave requests,  request further  including  information.  - approving  - rejecting  Implement  - requesting further  functionality to  information.  track and record  approved leave  • the system should track  requests, ensuring  and record approved  the relevant details  leave requests, including  and comments are  relevant details and  stored accurately.  comments.  Design and  • users should be able to  implement the  search and filter approved  database schema  leave requests based on  to track faculty  specific criteria.  attendance and  time off, including  • the system tracks faculty  approved leave,  attendance and time off,  sick leave,  including ;  personal days, and  - approved leave  other types.  - sick leave  Develop features to  - personal days  allow users to  - etc.  compare and  analyze attendance  • users should be able to  and time off  compare and analyze  statistics across  attendance and time off  faculty members,  statistics across faculty  departments, or  members, departments, or  specific time  time periods.  periods.  Test the | 6 Done | 3  6  10 |
| 8 |
| 4 |

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|  |  | functionality to  ensure accurate  processing of leave  requests, tracking  of attendance and  time off, and  accurate  comparison and  analysis of  statistics.  Documentation and  user guides to help  users understand  the system |  |  |
| --- | --- | --- | --- | --- |
| 3 |
|  |  | Documentation | 3 |
| FPS11 | Asa user, I must be able to  evaluate the  impact of faculty awards and  recognition  performance.  This will enable me to identify  patterns and  trends in their performance and assess the  effectiveness of these honors in promoting  excellence in  research and  teaching. | Design and  FacultyAwards and  developa user  Recognition Impact in the  interface to  system are as follows:  showcase faculty  • integration with faculty  achievements.  information system  • system displayed the  Implement the  award and achievements  backend  using bar graphs  functionality to  • bar height corresponds  retrieve and display  to the magnitude or  faculty  significance of the  achievements.  achievement.  Define the types of  • user can drill down for  achievements to be  more detailed information  displayed, such as  on each faculty  research  achievement.  publications,  awards, grants,  • each bar representsa  presentations, or  specific accomplishment  community  or contribution, such as  contributions.  - Blue: Project  Enable sorting and  Contribution  ordering options for  - Green: Performance  faculty  Impact  achievements.  - Red: Recognized  Test the faculty  Faculties  achievements,  display functionality  • system provides  and gather user  statistics labels or tooltips  feedback.  to describe each bar and  Document the  its achievement, follows  process for  as  displaying faculty  - Faculties with High  achievements.  Recognition Score  - Faculties with High  Evaluation Score | 4 Done | 3 |
| 10 |
| 4 |
| 4 |
| 3 |
| 2 |

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|  |  | - Number of Eligible  Awardee  - Faculty Working Hours |  |  |
| --- | --- | --- | --- | --- |
| FPS 12 | As a user, I must be able to  evaluate the  workload  balance and  fairness among the faculty  members.  Ensuring that all faculty members assigned tasks are aligned with their expertise and abilities. | Develop a UI for  Workload Allocation and  Workload  Workload Balance are as  Allocation that  follows:  could see the  • integration with faculty  record and  information system  workload for each  • workload allocation  faculty  should consider factors  such as;  The system needs  - faculty expertise  to monitor and  - availability  document the  - contractual obligations  allocated workload  for every faculty  • the system should track  member.  and record the assigned  The system must  workload for each faculty  have the capability  member, including ;  to search and filter  - specific tasks  workload  - time commitments.  allocations based  on specific criteria.  • users should be able to  The system should  search and filter workload  be able to assess  allocation based on  and analyze  specific criteria.  workload balance  • the system should  statistics across  display workload  departments or  allocation in a statistically  faculty categories.  meaningful way to visually  Conduct thorough  represent the distribution  testing, including  of tasks among faculty  usability and  members.  security testing  • workload balance is  Documentation  calculated and displayed  in the system, ensuring an  equitable distribution of  workload.  • workload balance  statistics should consider  factors such as ;  - teaching hours  - research commitments  - service responsibilities  - other workload  components.  • users should be able to  compare and analyze  workload balance  statistics across | 4 Done | 3 |
| 4  5  10  2 |
| 5 |

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|  |  | departments or faculty  categories. |  |  |
| --- | --- | --- | --- | --- |
| FPS 13 | Asa user, I want to track and  evaluate the  progress of  faculty members in achieving their development  plan objectives. By monitoring their  advancements, I can assess the effectiveness of development  initiatives in  improving faculty performance. | Developa  Progress monitoring for  Progress  faculty development  monitoring for  initiatives are as follows:  faculty  • integration with faculty  development  information system  initiatives UI  • system displays  progress monitoring using  a pie graph.  Integrate with the  pie graph visually  Faculty Information  represents the proportion  System (FIS) and  of progress for each  utilize analytics  initiative such as  tools to recognize  - green: completed  the development  - violet: workshops  initiatives  - yellow: seminars  undertaken by  - red: trainings  each faculty  member. Generate  • user can view current  a pie chart to  progress and the overall  visually represent  total trainings conducted  the distribution of  • users can drill down for  progress. Users  more detailed information  should be able to  on each initiative's  view, explore  progress.  further details, and  • users are able to see the  observe the  time period for displayed  progress over  progress with the overall  specific time  totals.  periods.  Perform function  • system providesa  testing  legend or key for  Documentation  understanding the graph,  such as  - Completed  - Workshops  - Seminars  - Trainings | 3 Done | 3 |
| 10  3 |
| 5 |
| FPS 14 | Asa user, I want to be able to  access and view each faculty's Basic details in the system. | Developa faculty  Faculty Profile  profile  Management:  management  module in the  • When accessing the  system sidebar  faculty management  page, users will encounter  On the faculty  a data table listing 10  profile  entities, including:  management page  or module,  - Faculty name  organize each  - Faculty type  faculty member ina  - Evaluation Rating  list format. Clicking | 7 Done |  |
|  |

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| FPS 15 | Asa user, I want to be able to  access and view each faculty  Data table and the characteristic | the performance  - Number of Present  button should  Research Publications  expand the view to  - Number of Present  reveal their concise  Training Attended  details,  - Action modal  contributions, and  Performance Button  overall  performance within  • Users have the option to  that specific  click ona specific faculty  module.  member listed withina  clickable performance  Test the  button. Upon clicking, it  functionality  expands to reveal their  Documentation and  concise details and overall  user guides to help  performance within this  users understand  module.  the system  Developa faculty  • Within the modal, users  management  can explore the personal  profile module in  details of each faculty  the system side bar  member, presented as  In the faculty profile  follows:  management page  or module createa  - Last Name  each faculty  - First Name  member ina  - Middle Name  clickable box, and  - Date of Birth  upon clicking, it will  - Faculty Department  expand  - Sex  to display their  - And other relevant  overall  information  performance within  this module  • This presentation mirrors  Test the  the format of every  functionality  module analytics, offering  Documentation and  a comprehensive faculty  user guides to help  overview that  users understand  encompasses:  the system  - Performance Rating  - Research Productivity  - Teaching Effectiveness | 7 Done |  |
| --- | --- | --- | --- | --- |
|  |
| 2 |
| 3 |
| 5 |
| 7 |
| FPS 16 | Asa user, I want to be able to see in the dashboard the analytics of  overall module performance | Developa  Dashboard Module:  Dashboard module  in the system have  • Within the top bar of the  a top bar  dashboard, users will find  the following options:  Within the  - Faculty Management  Dashboard module,  - Evaluation  establisha top bar  - Research & Publication  featuring faculty  - Merit & Promotion  analytics for each  - Awards and Recognition  page. Upon  - Professional | 7 Done | 5 |
| 10 |

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|  |  | clicking, users will  Development  access a table  And more  displaying  Clicking on More modules  comprehensive  will reveal additional  analytics for all  options, such as:  faculty members.  - Workload Distribution  The page is  - Leave Management  scrollable, allowing  Beneath this, the  users to view  dashboard displays the  analytics for every  Faculty Type and the  module as they  user's name.  scroll.  • In the dashboard, users  Test the system to  should have visibility into:  ensure all the  - Average Institutional  performance of all  Rating  faculty will visible to  - Total Research Products  the user  - Awarded Faculties  Documentation and  - Successful Trainings  user guides to help  - Reduced Workloads  users understand  the system  • Upon scrolling, users will  see or encounter:  - Present Academic Year  Faculty Evaluation  Results  - Research Productivity  - Workload Distribution  - Professional  Development  - Awards and Recognition  Impact  Each of these elements  has its own clickable  modal, directing users to  their respective pages. |  |  |
| --- | --- | --- | --- | --- |
| 5  7 |
|  |
| FPS 17 | As a user, I must be able to print everything  contained in  Evaluation  module | Develop a print  Research Productivity  button aligned to  Page - Printing  the upper right  • The user will be able to  corner  print everything included  on the page, which  Add functionality to  encompasses:  the button to allow  - Date  printing of the  - Time  entire Research  • The graph illustrating the  and Productivity  Average Rating Based on  dashboards.  Faculty Performance  Test the  Development in Research  functionality  Methodologies  Documentation and  - Present Academic  user guides to help  University Research  users understand  Goals | 8 Done | 2 |
| 5 |
| 3 |
| 3 |

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|  |  | the system  - Analytical Research  Bound and Published  Over Years |  |  |
| --- | --- | --- | --- | --- |
| FPS 18 | As a user, I must be able to print everything  contained in | Develop a print  Evaluation Module -  button aligned to  Printing  the upper right  • The user will be able to  corner  print everything included | 8 Done | 2 |
|  | Research and Publication  module | on the page, which  Add functionality to  encompasses:  the button to allow  - Date  printing of the  - Time  entire Evaluation  • The graph illustrating the  dashboards. |  | 5 |
|  |  | Average Rating Based on  Test the  Faculty Performance  functionality |  | 3 |

Documentation and user guides to help users understand the system

Development in Research Methodologies

- Present Academic University Research Goals

- Analytical Research Bound and Published Over Years

3

**Integration Approach for Information System**

The Faculty Performance System (FPS) adopts a Point-to-Point Integration approach, establishing direct connections with integrated systems such as the Faculty Information System (FIS) and Research Information System (RIS). This strategy ensures efficient and real-time data synchronization, allowing immediate updates to faculty details from FIS and the integration of the latest research data from RIS. The focused and direct connections streamline communication channels, promoting agility and efficiency in faculty performance assessments within the FPS.

**Introduction to TOGAF and 4 Architecture Techniques**

The Faculty Performance System benefits from aligning with The Open Group Architecture Framework (TOGAF) and leveraging various architecture techniques to ensure a structured, holistic, and effective development process. Architecture Development Method (ADM) utilizes TOGAF's ADM to guide the development process. This iterative and phased

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approach ensures that the Faculty Performance System aligns with business objectives, stakeholders' needs, and evolves in a controlled and systematic manner.

*Four (4) Architecture Techniques*

a. Business Architecture - defines the business architecture of the Faculty Performance System by identifying key stakeholders, their concerns, and aligning system features with organizational goals. The technique could be conducted using a business model canvas to visually represent the value proposition, customer segments of the Faculty Performance System.

b. Data Architecture - applying TOGAF's data architecture principles to manage and structure data effectively within the Faculty Performance System. Also employ Entity-Relationship Diagrams (ERDs) to model the relationships between different data entities such as faculty profiles, performance metrics, and scheduling information.

c. Application Architecture - designing the application architecture using TOGAF principles, ensuring that applications are modular, scalable, and align with business needs. Implementing the Microservices Architecture approach, breaking down the Faculty Performance System into independent, loosely-coupled services that can be developed, deployed, and scaled independently.

d. Technology Architecture - utilize TOGAF's technology architecture guidelines to select and implement appropriate technologies for the Faculty Performance System.

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**IV. Requirements Analysis**

**Stakeholder Identification**

Stakeholders are individuals or groups who have an interest or are affected by the project. Here's an overview of stakeholders for the Faculty Performance System: Stakeholder Engagement Assessment Matrix with desired (“D”) and current (“C”) levels of engagement per stakeholder.

*Table 11: Stakeholder Engagement Assessment Matrix*

| Stakeholder Engagement Assessment Matrix | | | |
| --- | --- | --- | --- |
| Stakeholder | Unaware Resistant | Neutral | Supportive Leading |
| 1. PUPQC Director | C |  | D |
| 2. PUPQC Academic  Head |  |  | C D |
| 3. PUPQC Faculties |  | C | D |
| 4. PUPQC Students | C |  | D |

*Table 12: Stakeholder Register*

| Stakeholder Register | | | | |
| --- | --- | --- | --- | --- |
| Project Name | Faculty Performance System | | | February 2024 |
| Stakeholders | Role | Category | Influence Interest | Concerns |
| 1. PUPQC  Director | System User | Internal | High High | Efficient Faculty  Performance Handling with Transparency |
| 2. PUPQC  Academic  Head | Project  Owner /  System User | Internal | High High | Improved and  Effective Faculty  Performance Management |
| 3. PUPQC  Faculties | Future  System  Beneficiary | Internal | Medium Neutral | Efficient Faculty  Performance Handling with Transparency |
| 4. PUPQC  Students | Future  System  Beneficiary | External | Low Neutral | Improved and  Effective Faculty  Performance  Management |

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*Table 13: Stakeholder Engagement Plan*

| Plan | Status | Task Outputs |
| --- | --- | --- |
| 1. Identify  Stakeholders | Done | Identifying and  Product Backlogs and  communicating with the  Expected output with the  highest stakeholder and  web application  provide details in the  project |
| 2. Stakeholder  Assessment | Done | Creating Stakeholder  Stakeholder Engagement  Assessment Matrix and  Assessment Matrix and  Stakeholder Register  Stakeholder Register |
| 3. Communication | Current | Continuous communication Web application expected output based on the  Product backlogs |

4. Stakeholder Engagement

Current Continuous communication Making them aware of the developing web app

*Table 14: Stakeholder Engagement*

| Stakeholder Engagement | | | |
| --- | --- | --- | --- |
| Stakeholder | Influence | Interest | Project  Engagement  Engagement  Frequency  Phase  Approach  Tools |
| 1. PUPQC  Director | High | High | Completed In person |
| 2. PUPQC  Academic  Head | High | High | Developme  In person /  Messenger /  Frequent  nt  Online  Google Meet |
| 3. PUPQC  Faculties | Medium | Neutral | Completed Online Google Meet |
| 4. PUPQC  Students | Low | Neutral | Completed Online |

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**Requirements Gathering techniques**

Requirements gathering is a critical phase in the development of the Faculty Performance System. Various techniques are employed to collect and document the requirements effectively. Here are the requirements gathering techniques used:

(1) Interviews, conducting one-on-one or group interviews with stakeholders allowing for in-depth discussions, clarification of ambiguities, and gathering diverse perspectives. (2) Meetings and Focus Groups, organize interactive meetings or focus group sessions with key stakeholders to brainstorm ideas, discuss requirements, and prioritize features. This promotes collaboration, and encourages open dialogue.

(3) Observation, the team observes users in their natural environment to understand their workflows, pain points, and specific needs. This provides insights into actual user behavior and real-world scenarios.

(4) Prototyping, a prototype or mockup of the Faculty Performance System to gather feedback on the visual and functional aspects.This will allow stakeholders to visualize the system early in the process and provides a tangible basis for discussion.

(5) Document Analysis, the team reviews existing documentation, reports, policies, and relevant materials to extract requirements will ensure alignment with existing processes and regulations.

(6) Brainstorming encourages the team for a free-flowing exchange of ideas and requirements among stakeholders. Sparks creativity, generates a variety of perspectives, and identifies potential features that may not be initially apparent.

**User Stories and Use Cases**

These are the user stories for the capstone project, total of 18, which are linked to the Faculty Performance System:

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1. As a user, I want to be able to login and securely authenticate myself on the system to perform authorized actions.

2. As a user I must be able to access and view average evaluation scores for faculty members. That allows me to assess the teaching effectiveness of the faculty within the institution.

3. As a user I must be able to track the trends in teaching effectiveness scores over time to evaluate the overall progress and effectiveness of the faculty members.

4. As a user, I want to track and analyze the number of publications and research outputs per faculty member, so that I can assess their productivity and contributions to the academic community

5. As a user, I must be able to measure the citations and impact of faculty research, as this will help me evaluate the quality and influence of their work.

6. As a user, I must be able to monitor the success rate of faculty members in securing research grants and funding, as this will indicate their ability to attract external resources and support for their projects.

7. As a user, I must be able to track and monitor the attendance and participation of faculty members in workshops, seminars, and training programs. This will allow me to gather valuable feedback from faculty on the effectiveness and relevance of these professional development activities.

8. As a user, I must be able to view faculty members' performances within the university and determine if the requirements for merit awards and promotions are met. 9. As a user, I must be able to determine the faculty members eligibility and suitability for promotion within the university.

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10. As a user, I want to easily access and analyze information about faculty members' attendance patterns and leave utilization. This will allow me to make informed decisions about their request and effectively manage approvals

11. As a user, I must be able to evaluate the impact of faculty awards and recognition performance. This will enable me to identify patterns and trends in their performance and assess the effectiveness of these honors in promoting excellence in research and teaching.

12. As a user, I must be able to evaluate the workload balance and fairness among the faculty members. Ensuring that all faculty members assigned tasks are aligned with their expertise and abilities.

13. As a user, I want to track and evaluate the progress of faculty members in achieving their development plan objectives. By monitoring their advancements, I can assess the effectiveness of development initiatives in improving faculty performance.

14. As a user, I want to be able to access and view each faculty's Basic details in the system.

15. As a user, I want to be able to access and view each faculty's overall performance in the system.

16. As a user, I want to be able to see in the dashboard the analytics of overall module performance

17. As a user, I must be able to print everything contained in Evaluation module 18. As a user, I must be able to print everything contained in Research and Publication module

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**Functional Requirements for Integration**

Functional Requirements for Integration of Faculty Performance System (FPS) with the Integrated Systems:

*Faculty Information System (FIS)*

1. Real-time Faculty Information Updates: Requirement is to *e*nsure real-time updates of faculty details, qualifications, and experience from FIS to FPS.

2. Bi-directional Data Exchange: Requirement is to enable bi-directional data exchange between FPS and FIS for both retrieval and updates.

3. Consistent Data Formatting: Requirement is to implement consistent data formatting standards for shared faculty information.

4. Authentication and Authorization Protocols: Requirement is to implement secure authentication and authorization protocols for data transmission.

5. Error Resolution Mechanism: Requirement is to develop an error resolution mechanism to rectify discrepancies in faculty information.

*Research Information System (RIS)*

1. Real-time Research Data Incorporation: Requirement is to enable real-time integration of research accomplishments from RIS to FPS.

2. Integration of Research Metrics: Requirement is to integrate key research metrics from RIS into FPS's performance analysis module.

3. Visualization of Research Insights: Requirement is to implement features for visualizing research insights within FPS.

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**V. Business Process Architecture**

**Identification of Business Process**

****Figure 3: Identification of Business Process

The Identification of Business Process flowchart outlines the steps involved in assessing and improving the Faculty Performance System for Business. It begins with identifying the process, followed by setting requirements, analyzing these requirements, monitoring and controlling the process, and finally implementing necessary redesigns to optimize performance.

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**Business Process Diagram**

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Figure 4: Faculty Performance System Business Process Diagram

This Business Process Diagram illustrates the steps for viewing and generating reports from the Faculty Performance System (FPS). The process begins with the user commencing the system and then identifying their user type. Only valid credentials can proceed to the FPS. Both user types have access to the system analytics. They have the ability to request or generate a

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report for a specific module within the system. After analyzing and processing data within the FPS, they can now conclude their session.

**Alignment of Integrated System with Business Processes**

1. Understanding Business Processes: Thorough identification and documentation of existing business processes pertaining to faculty performance, information management, and research contributions.

2. Integration Planning: Assessment of how integrated systems, Faculty Information System (FIS) and Research Information System (RIS), can enhance current business processes, with a focus on identifying and bridging any existing gaps.

3. Customization and Configuration: Tailoring the integrated system to align precisely with specific business process needs and configuring settings accordingly to ensure seamless operation.

4. User Involvement and Training: Active involvement of end-users in the integration process, coupled with the implementation of comprehensive training programs, ensuring proficient use of the integrated system.

5. Data Consistency and Integrity: Guaranteeing the uninterrupted flow of data between the integrated systems and maintaining consistency in data representation throughout the integration process.

6. Real-time Updates and Monitoring: Enabling real-time updates between the integrated systems and incorporating monitoring tools for continuous alignment, ensuring that the integrated processes remain synchronized.

7. Adherence to Compliance and Security: Ensuring strict adherence to regulatory compliance and implementation of robust security measures to safeguard sensitive data during the integration process.

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**Business Process Improvements**

Implemented within the Faculty Performance System (FPS), significant business process improvements have been realized. Thorough analysis and mapping of existing processes have streamlined workflows, eliminating inefficiencies and bottlenecks. Automation and technology integration have been successfully deployed, reducing manual interventions and accelerating processes. Leveraging data for decision-making is now a reality, with integrated systems providing seamless data flow and analytics tools offering valuable insights. The FPS now embraces customer-centric approaches, enhancing the overall experience and satisfaction of users. Cross-functional collaboration has been fostered, breaking down silos and improving communication channels.

Continuous monitoring, feedback loops, and agile methodologies have facilitated adaptability to changing needs. Quality assurance measures and standardized processes ensure accuracy and consistency in performance evaluations. Risk management strategies are in place, ensuring business continuity. The FPS has nurtured a culture of innovation, recognizing and empowering employees to contribute ideas for ongoing improvements. Regular evaluations and refinements solidify the FPS's alignment with evolving business objectives, contributing to sustained efficiency and effectiveness.

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**VI. Application Architecture**

**Components of Application Architecture**

The application architecture for Faculty Performance System is a complex yet cohesive structure consisting of several key components distributed across various layers and modules, these are:

The User Interface (UI) Layer features a Dashboard for faculty members to intuitively access and visualize performance metrics, a Reports Module for generating detailed reports, and Profile Management for updating personal information. The Data Layer houses a Database managing faculty-related data, and Data Processing mechanisms for cleaning and aggregating information. The Integration Layer employs APIs for communication between modules and third-party integrations for external data sources. The Security Layer ensures secure access through authentication and authorization, data encryption, and access controls. The Infrastructure Layer involves servers, database servers, and networking components. Monitoring and Logging include a logging system and tools for performance tracking.

Scalability and Performance Optimization employ load balancers and caching mechanisms. DevOps and CI/CD Tools manage version control, automated deployment, and testing environments. The Documentation and Knowledge Base include a repository storing comprehensive documentation. These components collectively form a robust architecture, guaranteeing functionality, security, and scalability tailored to the specific needs and preferences of the PUPQC.

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**Application Architecture Diagram**

Figure 5: Application Architecture Diagram

The architecture describes the flow from the user to the data layer. The user interacts with the presentation layer, which is secured by firewalls and hosted on a web server. The presentation layer communicates with the business layer, which hosts applications and backend processes and, in turn, interacts with the data layer to provide database and third-party services.

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**Integration of Software Modules**

****Figure 6: Integration of Software Modules

The figure depicts the integration of software modules, the Faculty Information System (FIS) is a centralized platform that manages faculty-related information. FIS provides a variety of modules that allow Faculty Users to input details into specific modules within the system. On the other hand, the FPS can only generate data contained in the FIS. Allowing the FPS to acquire analytical reports on faculty performance within PUPQC. The FPS also generates data from the Research Information System (RIS) specifically for the Research and Publication Module.

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**Communication and Interaction Patterns**

****Figure 7: System Interaction Patterns

The Faculty Performance System generates data from both the Faculty Information System (FIS) and Research Information System (RIS). The Faculty Information System serves as a hub for managing faculty-related data. This one-way data flow from FIS to FPS establishes expectations and interaction patterns that shape relationship types. And for RIS, it does provide information related to Research Output and Publication for FPS and FIS, suggesting that faculty performance metrics inform research endeavors.

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