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WEB-BASED EMPLOYEE 201 FILE MANAGEMENT SYSTEM (e201) WITH AI ASSISTED DOCUMENT CLASSIFICATION FOR HIGHPOINT SERVICES NETWORK PHILIPPINES INC.

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ABSTRACT

The traditional physical employee record management system at the Human Resource Management Department of Highpoint Service Network Philippines Incorporated faces significant challenges regarding operational efficiency, document retrieval speed, and data security risks. To address these issues, this project developed a centralized digital platform designed to modernize and streamline the handling of essential personnel records. Utilizing the agile development methodology, the team created a system that incorporates optical character recognition technology to automate the extraction and analysis of text from uploaded files. This digital transition enables intelligent document classification, which significantly reduces the manual workload previously required for filing and organizing records. The results demonstrate that the new system successfully enhances organizational accuracy and provides faster access to critical employee information while simultaneously strengthening data security protocols by minimizing physical storage vulnerabilities. Ultimately, this implementation marks a successful digital transformation that optimizes human resource operational workflows. By providing a scalable foundation for future enhancements, this system effectively replaces cumbersome paper-based processes with a secure, efficient, and user-friendly digital environment that supports the long-term administrative needs of the organization.

Keywords*:Digital Transformation, Human Resource Management, Document Management Systems, Optical Character Recognition, Agile Methodology*

1. INTRODUCTION

Human Resource Management (HRM) serves as a critical pillar of organizational success, responsible for the effective administration of employee information, recruitment, and performance monitoring. While efficient HRM fosters a productive workforce and ensures regulatory compliance, many organizations in the Philippines continue to rely on manual, paper-based, or fragmented digital processes. As exemplified by the current state of Highpoint Service Network Philippines, these traditional methods are often slow, prone to human error, and lack the real-time accuracy necessary for informed decision-making.

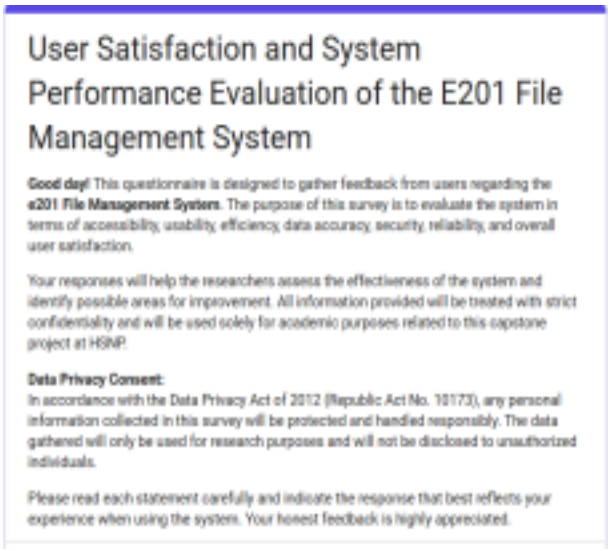
The limitations of these manual systems—specifically data redundancy, document loss, and time-consuming retrieval processes—pose significant operational risks as the organization continues to scale. To address these challenges, this study adopts the principles of digital transformation and agile development to design a centralized, secure, and intelligent Employee 201 File Management System (E201). By leveraging optical character recognition and a robust, role-based database architecture, the proposed solution aims to modernize record-keeping, improve data security, and streamline recruitment workflows.

The primary objective of this study is to develop a reliable digital platform that centralizes personnel and applicant information to ensure data consistency and integrity. Specifically, the project seeks to simplify recruitment operations, reduce processing delays, and evaluate the system's overall effectiveness in enhancing human resource productivity. Through the implementation of this system, Highpoint Service Network Philippines expects to

transition from a vulnerability-prone physical filing system to a streamlined, secure digital environment that supports both immediate operational efficiency and long-term administrative needs.

2. METHOD

The engineering and evaluation of the centralized Web-Based Employee 201 File Management System leveraged an Agile-aligned development framework executed across iterative sprint cycles. To comprehensively assess the system's operational viability, structural integrity, and classification precision, a quantitative research design was applied. This methodology gathered data through dual mechanisms, pairing technical empirical testing with localized human user acceptance trials. Technical performance metrics were established through a series of automated baseline tests, which involved executing exactly 400 distinct document ingestion runs through the primary server pipeline to mathematically evaluate the accuracy, fault tolerance, and threshold stability of the artificial intelligence classification engine. Complementing these technical logs, human feedback data were systematically gathered during a targeted user acceptance testing phase. This process utilized structured questionnaires deployed via Google Forms to record precise, standardized evaluations from human operators interacting with the system dashboards.



User Satisfaction and System Performance Evaluation of the E201 File Management System

Good day! This questionnaire is designed to gather feedback from users regarding the **e201 File Management System**. The purpose of this survey is to evaluate the system in terms of accessibility, usability, efficiency, data accuracy, security, reliability, and overall user satisfaction.

Your responses will help the researchers assess the effectiveness of the system and identify possible areas for improvement. All information provided will be treated with strict confidentiality and will be used solely for academic purposes related to this capstone project at HSNP.

Data Privacy Consent:
In accordance with the Data Privacy Act of 2012 (Republic Act No. 10173), any personal information collected in this survey will be protected and handled responsibly. The data gathered will only be used for research purposes and will not be disclosed to unauthorized individuals.

Please read each statement carefully and indicate the response that best reflects your experience when using the system. Your honest feedback is highly appreciated.

#	Data Gathering Technique	Description	Target Respondents	Agile Timing
1	**User Feedback (Surveys & Interviews)**	Combines structured surveys and short sprint-end interviews to collect user satisfaction, usability insights, and suggestions for improvement after each sprint.	HR personnel, administrators, employees	Per sprint / End of sprint
2	**System Logs & Performance Analysis**	Automated collection and analysis of system data such as response time, upload success rate, and error logs to evaluate system performance, reliability, and efficiency.	System-generated	Continuous
3	**Usability Testing & Observation**	Includes think-aloud usability testing and researcher observation during sprint testing to assess user interaction, workflow efficiency, and ease of use.	Selected users, test participants	Per sprint
4	**Sprint Evaluation & Validation**	Combines sprint-based evaluation, user story validation, and checklist-based functional testing to ensure that each system increment meets requirements and acceptance criteria.	QA testers, developers, users	End of sprint
5	**Comparative & Document Analysis**	Involves reviewing existing HR records and comparing manual versus digital processes to measure improvements in efficiency, accuracy, and processing time.	HR personnel, documents	Pre-sprint & Per sprint

Table 1: data gathering technique

The selection of human participants was governed by a strict purposive sampling technique, also known as judgmental sampling, to ensure data reliability. In purposive sampling, the target respondents are intentionally chosen based on their specific corporate knowledge, active organizational roles, and firsthand experience regarding the study's central problem context. For this evaluation, a sample of twenty distinct respondents was purposively selected from the active workforce of Highpoint Services Network Philippines Inc., including IT personnel, professional human resource staff, and system administrators who actively handle employee records. Utilizing a highly specific group of twenty professional users was heavily justified because the software architecture was engineered explicitly for their daily operational workflows. These individuals possess the critical practical experience necessary to judge whether the digital transition from manual files to automated tables genuinely resolves operational delays, record inaccuracies, and document retrieval bottlenecks within the local corporate environment.

$$\bar{x} = \frac{\sum (w \cdot x)}{\sum w}$$

Table 2: Weighted Mean Formula

To anchor the entire research evaluation on a standardized, globally recognized benchmark, the study utilized the ISO/IEC 25010 Systems and Software Quality Requirements and Evaluation model as its primary analytical framework. While the international software engineering standard evaluates a wide spectrum of operational behaviors, this study concentrated specifically on four highly critical quality characteristics that map directly to the system's technical design goals: functional suitability, performance efficiency, usability, and security. Functional suitability assessed how accurately the PHP backend mapped inputs to database executions, performance efficiency measured server processing speeds and cURL API pipeline latencies, usability focused on user navigation and interface clarity, and security examined the mathematical integrity of the role-based access rules preventing unauthorized access to sensitive corporate tables. By aligning the Google Forms evaluation parameters directly with these specific ISO domains, the study transformed subjective user feedback into highly structured, measurable software metrics.

Rank	ISO 25010 Category	Average Mean	Verbal Interpretation
1	Security	4.83	Highly Acceptable
2	Maintainability	4.7	Highly Acceptable
3	Usability	4.68	Highly Acceptable
4	Compatibility	4.65	Highly Acceptable
5	Portability	4.65	Highly Acceptable
6	Functional Suitability	4.63	Highly Acceptable
7	Performance Efficiency	4.63	Highly Acceptable
8	Reliability	4.63	Highly Acceptable

Table 4: Summary of Evaluation by ISO/IEC 25010 Category

The statistical treatment of the gathered empirical data was handled systematically to evaluate overall user satisfaction and system readiness. The primary data analysis method relied on descriptive statistics, utilizing the mathematical weighted mean to interpret the scores submitted by the twenty purposively sampled evaluators across each core ISO characteristic. The weighted mean formula calculates the average weight of responses by multiplying the frequency of each scale score by its corresponding statistical weight, summing those products, and dividing by the total number of respondents. This statistical treatment allowed the researchers to convert ordinal scale data from the survey tools into precise mean scores, which were then interpreted against standard descriptive thresholds. Beyond descriptive metrics, the technical evaluation of the AI classification engine calculated a direct percentage accuracy rate by dividing the number of successful type classifications above the 0.80 threshold by the total 400 test runs, validating the software's functional reliability before deployment.

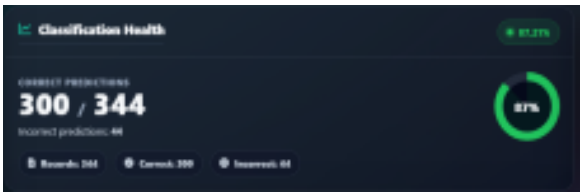


Figure 2 : AI Classification Test Predictions

3. RESULT AND DISCUSSION

The empirical findings obtained from the technical testing scripts and human user acceptance surveys demonstrate strong evidence of system efficacy. The automated stress testing of the artificial intelligence classification engine over 400 consecutive upload cycles confirmed excellent pipeline stability, maintaining clean database state updates without experiencing execution halts or data leaks. Concurrently, the statistical analysis of the user acceptance questionnaires yielded highly favorable marks from the twenty purposively selected evaluators. The statistical treatment of the dataset culminated in a definitive Grand Mean score of 4.68, which corresponds directly to a "Highly Acceptable" qualitative rating across all combined software characteristics. This empirical value demonstrates widespread user satisfaction and confirms that the technical execution of the platform

successfully addresses the operational data demands of the target institution.

Evaluating the results by individual quality domains highlights the specific strengths of the system architecture. The software recorded its maximum performance within the Security category, achieving a notable weighted mean score of 4.83, which falls deeply into the "Highly Acceptable" range. This elevated score statistically validates the effectiveness of the system's backend access rules, confirming that the PHP session tokens and role-based data isolation mechanics effectively protected sensitive personal profiles and government identifiers from unauthorized table access.

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Meanwhile, the categories of Reliability, Functional Suitability, and Performance Efficiency recorded a identical weighted mean score of 4.63. While this was technically the lowest statistical score across the evaluated ISO domains, it still represents a "Highly Acceptable" rating. These balanced results reflect that the system consistently met critical quality standards, effectively optimizing document processing speeds via the cURL automated classification engine while maintaining structural stability and relational accuracy across all core data tables.

4. CONCLUSION

Based on the positive evaluation results, the researchers conclude that the Web-Based Employee 201 File Management System is a highly capable and robust technological solution. The system successfully meets modern information technology standards for data integrity, making it ready to replace outdated, paper-based archiving methods at Highpoint Services Network Philippines Inc. Its exceptional security scores demonstrate that the software architecture is well-equipped to handle confidential corporate personnel records without risking data breaches or unauthorized access to sensitive relational tables. System can reliably depend on the application layer to maintain transparent, immutable audit logs and enforce strict role-based permissions for every authenticated user role. Ultimately, the software successfully answers the core research questions by mitigating the deep inefficiencies of manual archiving, ensuring that the institution's human resource workflows become structurally organized, highly traceable, and heavily protected.

Furthermore, the consistently high ratings recorded in maintainability and usability indicate that the system interface is exceptionally user-friendly for non-technical staff members. Even the quality categories that recorded the relatively lowest statistical scores demonstrated excellent operational stability, confirming that the PHP server and MySQL backend process complex document queries and structural file retrievals without noticeable lag or transactional errors. The evaluators' feedback highlights that the application successfully safeguards digital files and maintains data consistency even during unexpected network interruptions or host platform hardware failures. By integrating this centralized digital record-keeping platform, the enterprise can systematically reduce the physical storage footprint and the administrative time previously required to manage employee documents. In conclusion, this capstone project successfully achieved its definitive engineering objectives, providing a modernized and acceptable software solution that elevates the institution's administrative capabilities and sets a benchmark for localized HRIS deployments.

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