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Design of a Web-Based 360° Assessment Information System for AKHLAK Core Values at PT XYZ

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ABSTRACT

The rapid advancement of digital technology has increasingly compelled organizations to transform human resource management practices through the adoption of integrated Human Resource Information Systems (HRIS). Among the critical dimensions of HR management, employee behavioral assessment occupies a pivotal role in fostering competency development and sustaining organizational effectiveness. However, PT XYZ currently administers its 360° Core Values AKHLAK assessments through semi-manual processes relying on Google Forms and spreadsheet files, resulting in operational inefficiencies, fragmented data management, constrained monitoring capabilities, and elevated risks of administrative error. This study aims to design a web-based 360° Core Values AKHLAK assessment information system integrated with the company's existing HRIS infrastructure, with the objective of enhancing assessment process efficiency and strengthening organizational monitoring capabilities. The research employs the Prototype Model within the System Development Life Cycle (SDLC) framework, supported by observational data collection, stakeholder interviews, systematic literature review, and UML-based system modeling. The proposed system encompasses automated evaluator assignment, weighted score computation, real-time monitoring dashboards, centralized data management, automated notification mechanisms, and analytical visualization features. Evaluation findings indicate that the proposed system design is capable of substantially reducing manual administrative workload, improving assessment monitoring effectiveness, mitigating data inconsistency risks, and supporting data-driven decision-making in the domain of employee behavioral evaluation. The primary contribution and novelty of this study reside in the comprehensive integration of 360° feedback mechanisms, Core Values AKHLAK evaluation, and dashboard-based analytical visualization within a unified centralized platform.

1. Introduction

The rapid advancement of digital technology has driven the transformation of human resource management toward integrated platforms based on Human Resource Information Systems (HRIS), which have demonstrated significant improvements in operational efficiency, employee data accuracy, and organizational decision-making quality (Dessler, 2020; Laudon & Laudon, 2022). A critical aspect of human resource management is employee performance and behavioral assessment, which directly affects competency development and organizational effectiveness. Nevertheless, many organizations continue to face challenges including manual administrative processes, fragmented data storage, limited real-time monitoring capabilities, and insufficient analytical reporting features (Turban et al., 2018).

PT XYZ is an energy sector company that implements employee behavioral assessments based on Core Values AKHLAK. Comprising Amanah, Kompeten, Harmonis, Loyal, Adaptif, and Kolaboratif as part of its organizational culture transformation (Kementerian Badan Usaha Milik Negara Republik Indonesia, 2020). The company employs the 360° feedback method, a multi-source evaluation approach involving supervisors, peers, subordinates, and self-assessment, which is recognized for producing more comprehensive and objective evaluations while supporting competency development and organizational transparency (Bracken et al., 2016; Fleenor et al., 2020).

Currently, the assessment process at PT XYZ is conducted semi-manually using Google Forms and spreadsheet files, giving rise to several critical operational problems: manual recapitulation requires approximately 40 working hours per

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assessment period with a considerable risk of calculation errors, data scattered across multiple files impedes historical tracking, the absence of real-time participation monitoring and automated reminder mechanisms causes delays in assessment completion, and reporting remains limited to spreadsheet based tables without analytical visualization capabilities such as behavioral trend analysis and gap analysis between self-assessment and external evaluations.

To address these limitations, an integrated assessment information system is required one capable of automating evaluation workflows while enhancing organizational monitoring and analytical capabilities. This study proposes the design of a web-based 360° Core Values AKHLAK assessment information system integrated with the company's HRIS, developed using the Prototype Model approach. This method was selected for its emphasis on iterative interaction between users and developers through cycles of prototype construction and evaluation, offering greater flexibility than linear development methods in accommodating evolving requirements and improving usability aspects (Pressman & Maxim, 2020; Sommerville, 2016).

A review of prior literature reveals a clear research gap. (Alexander et al., 2023) developed a web-based employee performance information system with dashboard technology, yet their study focused solely on performance metrics without incorporating behavioral multi-source (360°) evaluation or Core Values compliance assessment. Similarly, studies on HRIS implementation (Dessler, 2020; Laudon & Laudon, 2022) have addressed operational HR data management but have not integrated 360° feedback mechanisms with real-time behavioral monitoring. Research on 360° feedback systems (Bracken et al., 2016; Fleenor et al., 2020) has demonstrated the effectiveness of multi-source evaluations, yet these studies lack integration with centralized HRIS platforms and automated dashboard analytics.

Furthermore, no existing study has specifically addressed the integration of Core Values AKHLAK evaluation within a unified digital assessment platform applicable to Indonesian state-owned enterprises. Prior studies have therefore generally addressed performance appraisal systems or HRIS implementation in isolation, with notable limitations in integrating multi-source behavioral assessments, real-time dashboard monitoring, automated notifications, behavioral gap analysis, and centralized historical assessment management within a unified platform (Alexander et al., 2023).

The novelty of this study, therefore, lies in the comprehensive integration of 360° feedback, Core Values AKHLAK evaluation, role-based dashboards, automated notifications, and analytical visualization into a single centralized platform, a combination not previously addressed in the existing literature. Unlike prior systems that address individual components in isolation, this study proposes a unified architecture that bridges HRIS integration, multi-source behavioral assessment, real-time monitoring, and organizational culture evaluation within a scalable web-based platform. The proposed system is expected to enhance operational efficiency, minimize administrative errors, facilitate organizational monitoring, and support data-driven decision-making in employee development and organizational culture evaluation.

2. Research Methods

2.1 System Development Life Cycle

This study adopts the System Development Life Cycle (SDLC) as the general framework for organizing system development activities. SDLC provides a structured and systematic approach for developing information systems through several sequential stages (Pressman & Maxim, 2020; Sommerville, 2016).

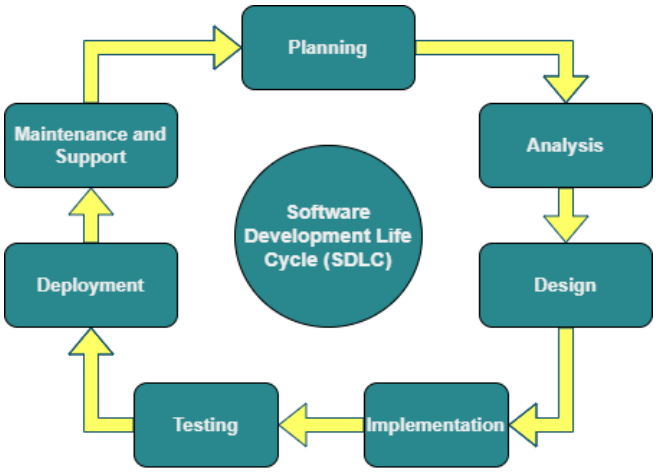

Figure 1. System Development Life Cycle

a. Planning
The planning stage focuses on identifying project objectives, defining research scope, determining stakeholder involvement, and analyzing the feasibility of the proposed system.
b. Analysis
At this stage, the existing employee assessment business process was analyzed to identify operational problems, stakeholder requirements, and functional requirements needed by the proposed system.
c. Design
The design stage involves creating system architecture designs, database structures, business process models, interface layouts, and UML diagrams representing the proposed system functionalities.
d. Implementation
The implementation stage focuses on developing the prototype system and implementing system functionalities based on the approved design and identified requirements.
e. Testing

Testing activities were conducted to evaluate whether the developed prototype aligns with organizational requirements and user expectations. Stakeholders provided feedback regarding workflow suitability, interface usability, and system functionalities.

f. Deployment
The deployment stage refers to preparing the proposed system design and prototype for future implementation within the organization.

g. Maintenance and support
Maintenance and support activities involve future system improvements, feature updates, and technical support to ensure the effectiveness and sustainability of the implemented system.

2.2 SMART Project Objectives Framework

This study adopts the SMART Project Objectives Framework to define clear and measurable project objectives. The SMART framework consists of five criteria: Specific, Measurable, Achievable, Relevant, and Time-bound, which are commonly used to ensure that project objectives are well-structured and aligned with organizational needs (Ogbeiwi, 2021).

a. Specific
The proposed system specifically focuses on designing a web-based 360° Core Values AKHLAK assessment information system integrated with the company's HRIS to support employee behavioral evaluation processes.

b. Measurable
The proposed system is expected to reduce manual assessment recapitulation time, minimize administrative errors, improve assessment completion rates, and provide real-time monitoring capabilities for assessment activities.

c. Achievable
The system is considered achievable because the development process is based on existing organizational workflows, available technological infrastructure, and identified stakeholder requirements.

d. Relevant
The proposed system supports the organization's digital transformation initiatives and enhances the effectiveness of employee behavioral assessment processes aligned with Core Values AKHLAK implementation.

e. Time-bound
The system design and prototype development processes are conducted within the scope and timeline of the research period, focusing on producing validated system design documentation and prototype interfaces.

2.3 Prototype Method

This study uses the Prototype Model as the system development method. The Prototype Model emphasizes iterative interaction between users and developers through prototype creation and evaluation activities (Pressman & Maxim, 2020). This method allows stakeholders to continuously provide feedback during the design process, enabling gradual refinement of system functionalities and interface designs according to organizational requirements.

The Prototype Model was selected because the proposed system emphasizes dashboard visualization, role-based access, usability aspects, and interactive workflows requiring continuous validation during the design stage. The stages of the Prototype Model implemented in this study are as follows in Figure 2.

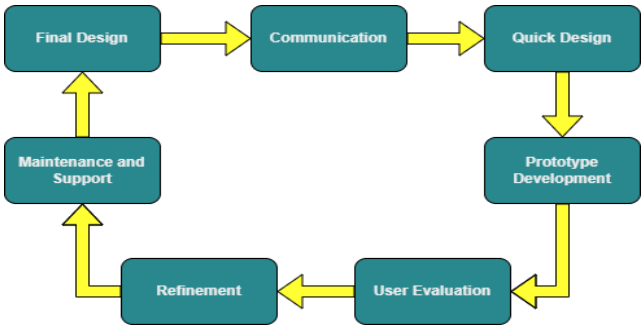

Figure 2. Prototype Method

a. Communication
Discussions and interviews were conducted with stakeholders to understand existing business processes, identify operational problems, and gather system requirements.

b. Quick Design
An initial system design was developed based on identified requirements, including business process models, database structures, and preliminary interface layouts.

c. Prototype Development
A prototype system was developed to visualize system functionalities, dashboard features, assessment workflows, and interface designs.

d. User Evaluation
Stakeholders evaluated the developed prototype to determine whether the proposed system aligned with organizational requirements and user expectations.

e. Refinement
Based on stakeholder feedback, revisions and improvements were performed on the prototype design, including workflow optimization and interface refinement.

f. Final Design
The final stage produced complete system design documentation, including UML diagrams, business process models, database structures, and interface mockups that serve as implementation blueprints.

2.4 Data Collection

Data collection in this study was carried out through three primary methods: observation, interviews, and literature review. Observational activities were conducted directly at PT XYZ to examine the existing employee behavioral assessment workflow, document current operational procedures, and identify systemic constraints encountered during assessment implementation.

Interviews were subsequently conducted with key stakeholders involved in the assessment process. A total of five participants were engaged through semi-structured interviews, comprising two HR administrators responsible for managing assessment operations, one direct supervisor who oversees evaluator approval workflows, and two regular employees representing end-users of the assessment system. Stakeholders were selected purposively based on their direct involvement in the existing assessment process, ensuring that the gathered requirements reflected actual operational needs across different user roles.

The interviews focused on eliciting in-depth information pertaining to organizational problems, functional system requirements, workflow inefficiencies, and expected system capabilities. The interview findings served as the primary empirical basis for defining system specifications aligned with actual organizational needs. Prototype validation was subsequently conducted through structured stakeholder evaluation sessions in which each participant reviewed the developed prototype against defined acceptance criteria. Feedback was systematically collected and categorized by functional domain, and iterative refinements were applied to the prototype design until all critical requirements were confirmed as fulfilled by the respective stakeholders.

To complement the empirical data, a systematic literature review was undertaken encompassing scholarly books, peer-reviewed journals, conference proceedings, and prior research relevant to the domains of Human Resource Information Systems (HRIS), employee behavioral assessment, 360° feedback methodologies, dashboard monitoring systems, and the Prototype Model development approach. The literature review provided the theoretical foundation necessary to contextualize the research problem and substantiate the proposed system design (Creswell & Creswell, 2023; Dennis et al., 2015).

2.5 Unified Modeling Language (UML)

Unified Modeling Language (UML) was employed in this study as the primary notation framework for modeling system functionalities, operational workflows, and inter-component relationships in a structured and standardized manner. The adoption of UML facilitated systematic visualization of the proposed system architecture and supported comprehensive system analysis activities throughout the design process.

Four categories of UML diagrams were developed to represent distinct dimensions of the system. Use case diagrams were constructed to identify and delineate interactions between users and system functionalities, providing a high-level representation of system scope and actor relationships. Activity diagrams were utilized to model the sequential flow of business processes, capturing decision points and parallel workflows within the assessment lifecycle. Sequence diagrams were developed to illustrate the chronological interactions between system components, depicting message exchanges and operational logic across system layers. Finally, class diagrams were formulated to model the database structure and define the relationships between system entities, constituting the structural foundation of the system's data architecture (Dennis et al., 2015).

3. Result and Discussion

3.1 System Requirement

3.1.1 Stakeholder identification

Stakeholder identification was conducted to determine the parties involved in the proposed system and to analyze their primary interests and responsibilities within the employee behavioral assessment process. According to stakeholder analysis concepts, identifying stakeholders is important to ensure that the developed system aligns with organizational objectives and user requirements (Freeman et al., 2018).

Table 1. Stakeholder Identification

No	Stakeholder	Main Interest
1	System Owner (Company)	Accurate work culture data to support strategic decision-making.
2	System User (Admin HR)	Intuitive interface and automated employee plotting and assessment recapitulation.
3	System User (Employee)	Objective and transparent assessment process.
4	System Developer (Author)	System design aligned with organizational requirements.

Based on the stakeholder analysis presented in Table 1, the stakeholders involved in the proposed system consist of the system owner, system users, and system developers. Each stakeholder has different interests, ranging from strategic decision-making needs, operational efficiency, objective assessment processes, to system development requirements. The identification results serve as the foundation for defining system functionalities, access rights, and system interaction requirements.

3.1.2 Process business identification (as-is, to-be)

a. As-Is Process
   The current employee behavioral assessment process at PT XYZ is still conducted semi-manually using Google Forms and spreadsheets. HR Administrators manually perform evaluator plotting, distribute assessment forms, monitor assessment progress, send reminders, and recapitulate assessment results. Weighted score calculations are also processed manually, requiring

significant time and creating risks of data inconsistency and administrative errors. In addition, assessment data are stored across multiple files, making historical tracking and reporting processes inefficient.

b. To-Be Process
The proposed business process introduces a web-based 360° Core Values AKHLAK assessment information system integrated with the company's HRIS. Employee data and evaluator plotting are automatically synchronized through the system, while assessment distribution, monitoring, reminder notifications, and weighted score calculations are performed automatically. The system also provides real-time monitoring dashboards, centralized data storage, and analytical visualization features to support organizational evaluation and decision-making processes more effectively.

3.1.3 System Requirements identification

System requirements define the conditions or capabilities that must be possessed by the system to fulfill the needs of each identified stakeholder. These requirements serve as an agreement between the development team and stakeholders, as well as the primary reference for system acceptance testing. System requirements are divided into two categories: functional requirements, which define what the system must be able to do, and non-functional requirements, which define how the system should operate (Pressman & Maxim, 2020; Sommerville, 2016).

a. Functional Requirements

Table 2. Functional Requirements

Code	Actor	Requirement
FR-01	Admin HR	Employee Data Management
FR-02	Admin HR	Assessment Period Configuration
FR-03	Admin HR	Assessor Plotting Management
FR-04	Superior	Assessor List Approval
FR-05	All Users	Session Authentication & Management
FR-06	All Users	Assessment Form Completion
FR-07	System	Automatic Score Calculation
FR-08	Admin HR, Superior	Dashboard Real-Time Monitoring
FR-09	Admin HR, Management	Dashboard Assessment Results
FR-10	Employee	Access Personal Assessment Results
FR-11	Admin HR	Assessment Data Export
FR-12	System	Automatic Notifications &Reminders
FR-13	Admin HR	Assessment History Management

b. Non- Functional Requirements

Table 3. Non-Functional Requirements

Code	Actor	Requirement
NFR-01	Performance	Response time ≤3s (normal), ≤5s (200 users)
NFR-02	Availability	Uptime ≥99.5% per month
NFR-03	Security	Encrypted sensitive data
NFR-04	Usability	Easy to use (≤10 min without training)
NFR-05	Compatibility	Supports major browsers (≥1024×768)
NFR-06	Scalability	Scalable up to 2× users
NFR-07	Integration	Integrates with HRIS via API
NFR-08	Maintainability	Code follows standards with ≥70% unit test coverage

3.1.4 User Acceptance Criteria

User Acceptance Criteria (UAC) were defined to evaluate whether the proposed system successfully fulfills stakeholder requirements and addresses the operational problems identified in the existing assessment process. The acceptance criteria were formulated based on the expected system improvements, including operational efficiency, process automation, monitoring capabilities, reporting accuracy, and user experience enhancement.

Table 4. Acceptance Criteria

No	Acceptance Criteria	Expected Outcome
1	Automated evaluator plotting and form distribution	Reduced manual administrative activities
2	Automatic weighted score calculation	Faster assessment recapitulation
3	Real-time monitoring dashboard	Easier assessment progress monitoring
4	Automated reminder notifications	Increased assessment participation
5	Centralized assessment database	Easier historical data management
6	Analytical dashboard visualization	Better behavioral analysis
7	Role-based system access	Controlled user authorization
8	User-friendly interface	Easier system usability

Based on the defined acceptance criteria, the proposed system is expected to improve operational efficiency, minimize administrative errors, support data-driven decision-making, and enhance the effectiveness of employee behavioral assessment processes at PT XYZ.

3.2 System Design

3.2.1 Database design

A class diagram is a UML (Unified Modeling Language) diagram that enables graphical modeling to represent various system components declaratively, that is, the static structure of the application domain in terms of concepts and the relationships between them (Dennis et al., 2015).

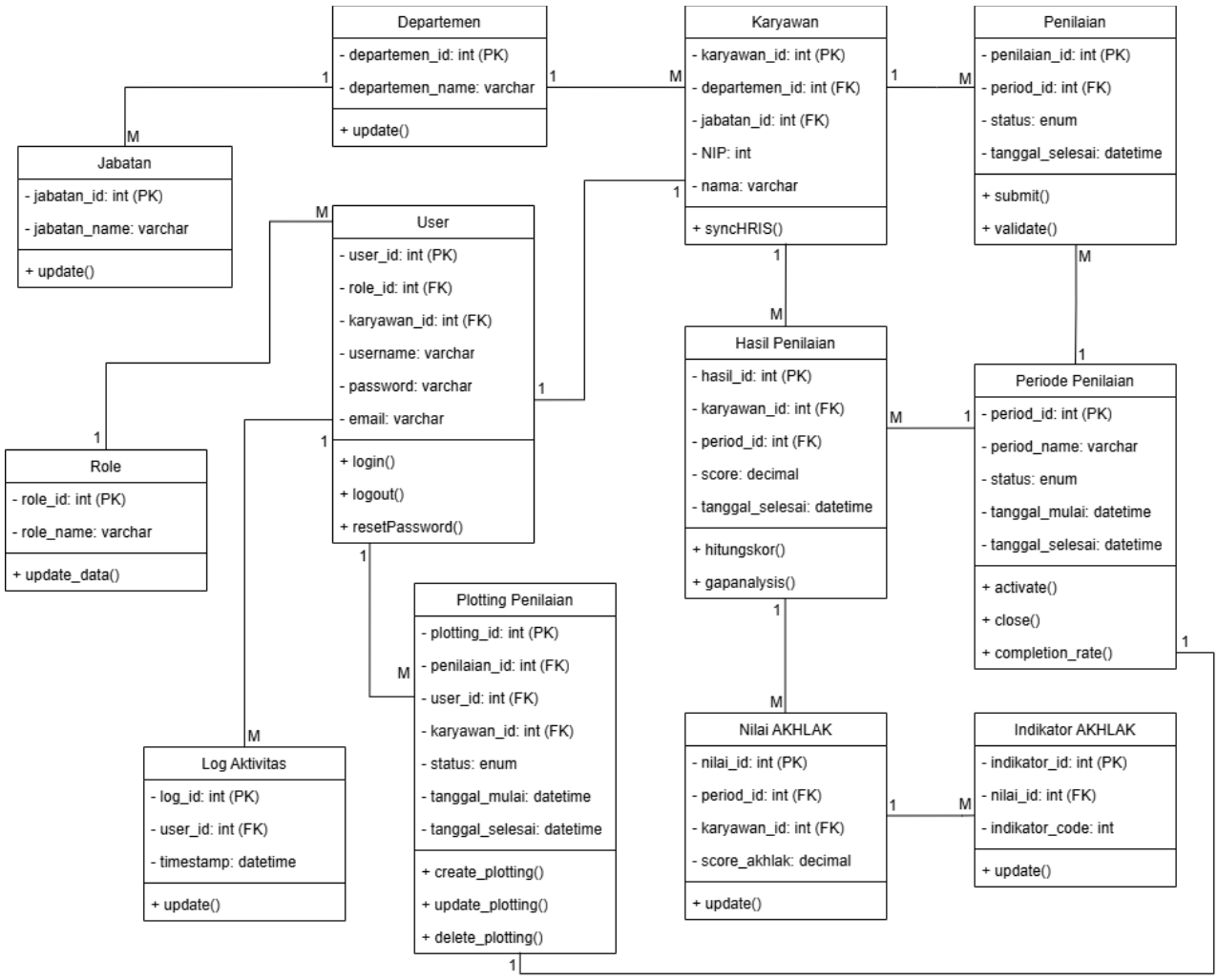

Figure 3. Class Diagram

The database was designed using a relational database approach to support centralized data management within the proposed system. The main entities include employee data, assessment periods, evaluator assignments, assessment results, notifications, and user access data. The database is also integrated with the company's HRIS to automatically synchronize employee and organizational hierarchy data, supporting automated assessment workflows and minimizing manual input errors.

Furthermore, the database structure illustrates the relationships between organizational entities involved in the performance assessment process. The Departemen entity is connected to Jabatan and Karyawan, representing the organizational hierarchy and employee placement within the company. Each employee is associated with a specific department and position, while the User entity manages authentication and authorization functions through role-based access control. In addition, the system records user activities through the Log Aktivitas entity to support monitoring, traceability, and system security. The integration between these entities ensures that employee data and access permissions are consistently maintained throughout the assessment process. The database design also supports the end-to-end performance evaluation workflow through entities such as Penilaian, Periode Penilaian, Plotting Penilaian, Hasil Penilaian, and Nilai AKHLAK. The Plotting Penilaian entity manages evaluator assignments for each employee during a specific assessment period, while Hasil Penilaian stores the evaluation scores and completion status. This relational structure enables efficient data processing, automated report generation, and analytical features such as gap analysis and performance monitoring, thereby improving the effectiveness and transparency of the employee assessment system.

3.2.2 Use Case Diagram

A Use Case Diagram is a UML (Unified Modeling Language) model used to graphically depict the interactions between users (actors) and the system. A use case is an activity performed by the system in response to a user request, representing the steps involved in a specific function or business process (Dennis et al., 2015).

Figure 4. Use Case Diagram – Admin HR

3.2.3 *Activity Diagram*

An Activity Diagram is a UML (Unified Modeling Language) behavioral diagram that depicts the internal behavior of a program's various operations using nodes and edges. This diagram (see Figure 5) describes the various user or system activities, who performs each activity, and the sequence of those activities (Dennis et al., 2015).

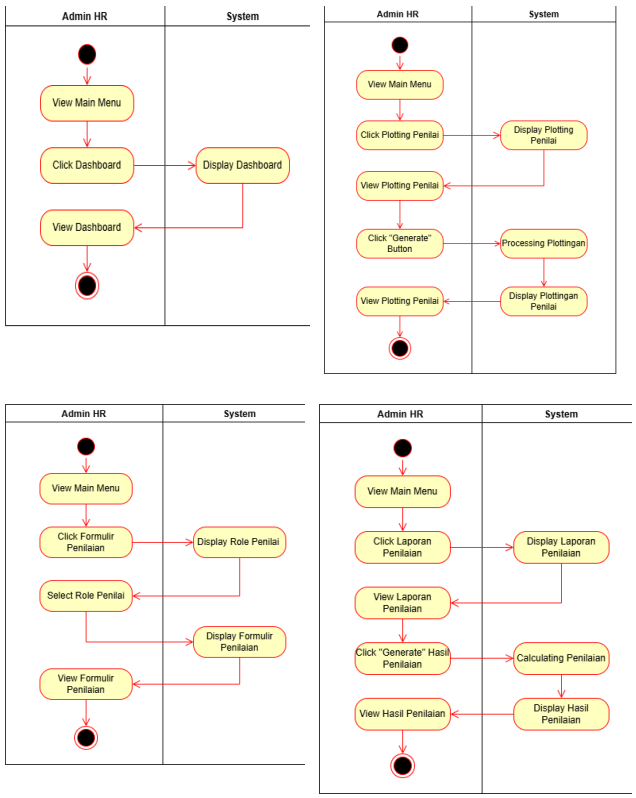

Figure 5. Activity Diagram

3.2.4 *Sequence Diagram*

A sequence diagram is a dynamic diagram that illustrates what happens during the system's execution. In this diagram, all operational details are specified, and the messages exchanged between objects involved in the operation are described along with the timing of their occurrence (Dennis et al., 2015). A sequence diagram is a time-based representation of messages within a system because it displays a timeline of events. This diagram also shows what happens when a flow in a use case or activity diagram is executed, while simultaneously displaying the set of collaborating objects along with the messages flowing between them. In addition, the database design applies primary key and foreign key relationships to maintain data consistency and integrity across all entities. Each table is interconnected to support real-time data retrieval and structured reporting processes within the assessment system. By implementing a relational database model, the system can improve scalability, reduce data redundancy, and support future system development and integration requirements.

This diagram (see Figure 6) is constructed with time flowing from top to bottom, and objects are ordered from left to right according to the chronological order of their appearance in the sequence of messages.

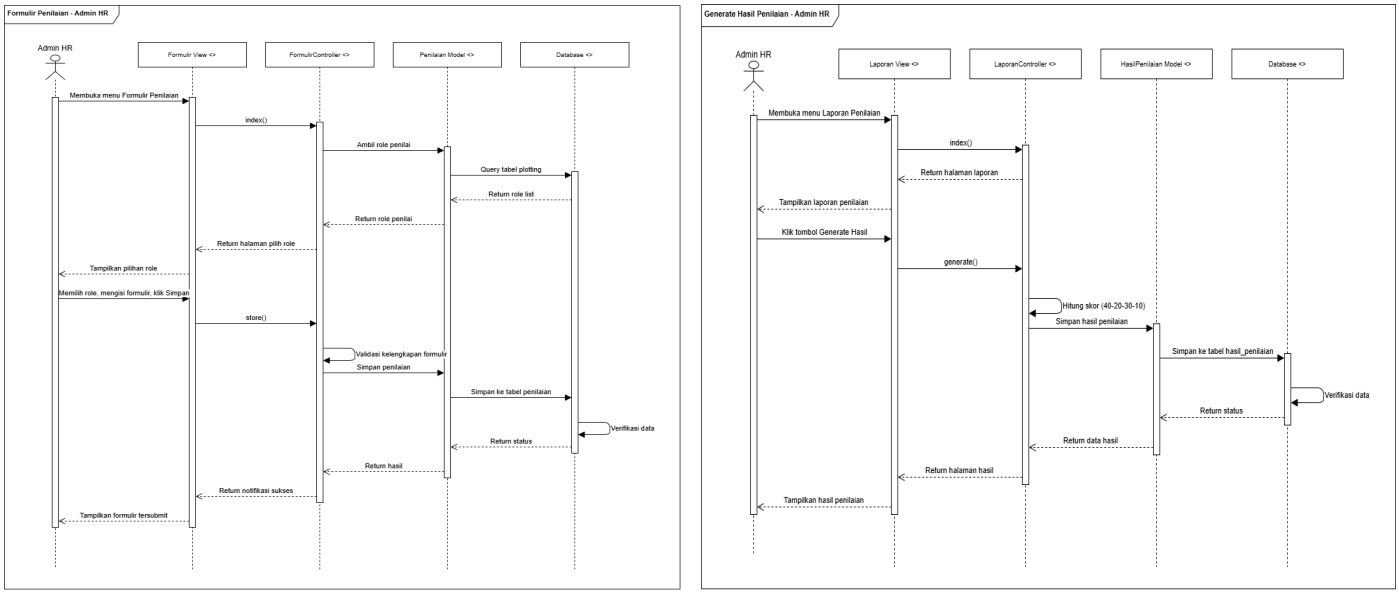

Figure 6. Sequence Diagram

3.3 Interface design

The interface design was developed to support usability, accessibility, and operational efficiency within the proposed system. The interface emphasizes a simple, responsive, and user-friendly design to facilitate user interaction during assessment activities (Darmawan et al., 2022). In addition, the interface design focuses on information clarity, navigation consistency, and ease of access to system functionalities, enabling stakeholders to perform assessment, monitoring, and reporting activities more effectively (see Figure 7 and Figure 8).

The proposed system demonstrates several advantages over existing approaches documented in the literature. Compared to (Alexander et al., 2023), who developed a web-based performance dashboard without multi-source behavioral input, the present system integrates 360° feedback from multiple evaluator roles (superiors, peers, subordinates, and self-assessment), thereby producing more comprehensive and objective behavioral evaluations consistent with the theoretical benefits of 360° feedback methodology (Bracken et al., 2016; Fleenor et al., 2020).

Unlike conventional HRIS platforms described by (Dessler, 2020; Laudon & Laudon, 2022) that manage employee administrative data without behavioral evaluation components, this system bridges the gap by coupling HRIS integration with automated Core Values AKHLAK assessment workflows. Furthermore, the incorporation of real-time monitoring dashboards and behavioral gap analysis features represents a meaningful advancement over static spreadsheet-based reporting, enabling HR administrators and management to make evidence-based decisions with greater timeliness and accuracy.

From an organizational efficiency perspective, the automated evaluator plotting and weighted score calculation features of the proposed system directly address the 40 working hours of manual recapitulation currently required per assessment period, representing a substantial reduction in HR administrative burden. The automated notification mechanism further mitigates the risk of incomplete assessment cycles by proactively reminding evaluators, thereby improving participation rates and data completeness. Centralized data management eliminates the fragmentation inherent in distributed spreadsheet storage, enabling longitudinal behavioral trend analysis and gap analysis between self-assessment and external evaluations, capabilities that are absent in the current process. These system advantages collectively support organizational monitoring effectiveness and strengthen the capacity for data-driven decision-making in employee development and organizational culture evaluation.

In terms of practical and managerial implications, the proposed system offers a replicable digital HR governance model applicable to other state-owned enterprises (BUMN) and large-scale organizations implementing Core Values AKHLAK. By providing a standardized, scalable platform for behavioral evaluation, the system can support organizational culture internalization across hierarchical levels, improve transparency and accountability in employee evaluations, and accelerate HR strategic decision-making through analytical dashboards.

The role-based access control mechanism further ensures that evaluation data are accessible only to authorized parties, reinforcing data privacy and governance standards. These characteristics position the system as a scalable digital HR transformation tool aligned with broader national initiatives

for public sector and state-owned enterprise modernization in Indonesia. Nevertheless, a key limitation of the current study is that system validation was conducted at the design and prototype level without empirical implementation in a live operational environment; future research should undertake full-scale deployment and measure actual performance metrics to confirm the system's impact on organizational efficiency and assessment quality.

The system design and business process transformation proposed in this study provide several important implications for organizational digitalization and employee performance governance. By replacing semi-manual assessment activities with an integrated web-based platform, the organization can significantly improve operational efficiency, reduce administrative workload, and minimize the risk of human error during assessment recapitulation and reporting processes. The integration between the assessment system and the company's HRIS also ensures data consistency and enables real-time synchronization of employee and organizational structure information, thereby supporting more reliable and accurate decision-making processes. From a managerial perspective, the implementation of a 360° Core Values AKHLAK assessment system strengthens transparency, objectivity, and accountability in employee behavioral evaluation. The involvement of multiple evaluators, including superiors, peers, subordinates, and self-assessment, enables organizations to obtain more comprehensive behavioral insights compared to conventional single-evaluator approaches. Furthermore, the availability of analytical dashboards and gap analysis features allows management to identify behavioral competency gaps, monitor organizational culture implementation, and formulate evidence-based employee development strategies more effectively. The proposed system also contributes to organizational governance and long-term digital transformation initiatives. Through centralized database management, role-based access control, and automated monitoring features, the system supports data security, traceability, and sustainable information management practices.

In terms of user experience and operational sustainability, the responsive and user-friendly interface design improves system accessibility and encourages higher user participation during assessment periods. Automated reminder notifications and simplified assessment workflows reduce delays and incomplete submissions, contributing to improved assessment completion rates and organizational monitoring effectiveness. Therefore, the proposed system not only functions as an operational assessment tool but also serves as a strategic digital platform to support organizational culture reinforcement, employee development, and data-driven human resource management practices.

Figure 7. Login Page

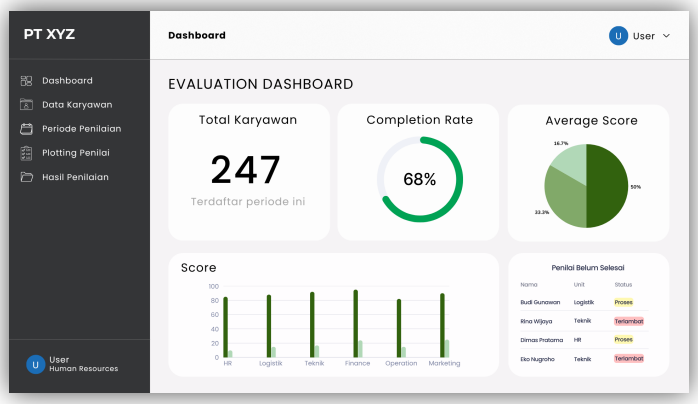

Figure 8. Dashboard Feature

4. Conclusion

This study successfully designed a web-based 360° Core Values AKHLAK assessment information system integrated with the HRIS of PT XYZ, developed through the Prototype Model approach to address critical operational deficiencies inherent in the existing semi-manual assessment process, encompassing inefficient recapitulation workflows, fragmented data storage, constrained monitoring capabilities, and the absence of analytical visualization features.

The proposed system incorporates a comprehensive set of functionalities including automated evaluator assignment, weighted score computation, real-time monitoring dashboards, centralized database management, automated notifications, and analytical reporting. Based on the system design analysis and stakeholder validation conducted during the prototype evaluation sessions, the proposed system is projected to reduce manual assessment recapitulation time by eliminating the approximately 40 working hours currently

required per assessment period, minimize administrative error risks associated with manual score calculations, and improve assessment monitoring effectiveness through real-time participation dashboards. These projected improvements are grounded in the system requirements analysis and the acceptance criteria validated by stakeholders, and are consistent with findings from prior HRIS research demonstrating efficiency gains from process automation. The application of the Prototype Model further ensured continuous stakeholder engagement throughout the design process, enabling iterative refinement of system functionalities and interface designs in accordance with evolving organizational requirements. It is acknowledged, however, that empirical quantification of efficiency gains requires future implementation and measurement within a live operational environment.

Future research is recommended to undertake empirical implementation and rigorous evaluation of the system within live operational environments, as well as to explore the integration of advanced analytical capabilities such as predictive analytics and artificial intelligence-based behavioral assessment to further augment the system's capacity in supporting organizational evaluation and human resource development objectives.

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