Proceeding 2nd Medan International Economics and Business

Volume 2, Issue 1, 2024
"Human Resource Transformation and Collaborative Innovation to Build Independent and Competitive Business in the Digital Era"

DESIGN OF AN EMPLOYEE DATA APPLICATION FOR ACCOUNTING INFORMATION SYSTEM NEEDS

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ABSTRACT
This study aims to design an employee data application integrated with an accounting information system. The application is designed to enhance the efficiency and accuracy of employee data management, supporting the company's administrative and financial needs. The development method used is the Waterfall model, which includes the stages of analysis, design, implementation, testing, and maintenance. This application allows structured recording of employee data, ranging from personal information and work history to salary and benefits data. Integration with the accounting information system enables automatic data synchronization, minimizing manual input errors and accelerating the financial reporting process. The results of this study indicate that the designed application can facilitate employee data management and support the smooth operation of the company's accounting information system.

INTRODUCTION

An organization ensures to improve operational efficiency and competitiveness. In this regard, realizing this objective is achieved through the implementation of an integrated and effective information system. Therefore, one of the key components of the company's information system is the implementation of an Accounting Information System, which plays an important role in managing the company's financial and operational data. In this context, the design of an employee data application integrated with the Accounting Information System becomes crucial. Not only does the application aid in managing employee data, but it also supports various related accounting functions such as payroll, benefits, and generating more accurate financial reports. Utilization of Accounting Information Systems involves accounting and financial data processes, generating valuable information for decision-makers and company management. The success of an Accounting Information System heavily relies on the integrity and quality of the data inputted into the system. Crucially, employee data storage and organization are fundamental within Accounting Information Systems. Employee data encompasses personal information, work-related data, attendance records, and more. The systematic and measured design of an employee data application is crucial to ensure that no problematic data enters the Accounting Information System, thus enhancing information completeness, high accuracy, and continual up-to-date status. Much research has been conducted to explore the integration of employee data applications and Accounting Information Systems. As stated by Smith (2018), effective integration between these systems can reduce errors in payroll processing and enhance the

accuracy of financial reports. Other related studies, such as those highlighted by Brown (2019), emphasize the importance of designing systems that are flexible and adaptable to company needs. These studies collectively suggest that systematically designing employee data applications effectively improves efficiency in operational aspects, cost reduction, and other critical aspects important for company management structure, while also enhancing employee satisfaction. If you look at the benefits, it is quite clear that designing and implementing employee data integrated into an Accounting Information System is not easy. There are many challenges that must be faced, such as technical problems, organizational structure and human resources. The thing that is most often found is inaccurate employee data, which causes losses for the company. So it is necessary to design applications that are user-friendly and have effective mechanisms for validating and verifying employee data. Apart from that, integration between employee data applications and AIS also requires special attention to data security. Employee data is sensitive data that must be protected from invalid access. Therefore, designed applications must have strong security features, including data encryption, strict access controls, and audit trails to monitor who accesses and changes data. This is very important to ensure that employee data remains safe and protected.

Several research results related to employee data design and Accounting Information System integration as stated by Chung et al. (2020), in their research it was found that there was good integration between employee information systems and accounting, thereby increasing the company's operational efficiency. The main thing that they highlighted was the importance of choosing the right technology and having an efficient database design so that integration can be achieved optimally. As for other research related to this, as stated by Gupta (2021), companies that adopt accounting information systems and integrate with employee data will experience improvements in the quality of financial reports and better decision making. The research also emphasizes the importance of training and changes in organizational culture in supporting the implementation of an integrated system. Wong and Tan (2022) suggest that the use of cloud computing technology in designing employee data applications and accounting information systems can increase system scalability and flexibility. This research also found that companies that utilize cloud-based solutions can adapt to changing business and technology needs. For this reason, there are several approaches used to design employee data applications, namely, needs analysis which must be carried out by identifying more specific needs of the company and employees. Such as interviews with users, business process analysis and reviews of existing systems. So the results of this needs analysis will be used in designing the database so that it includes all relevant employee information, such as personal, employment and financial data. The design of the database schema ensures that it has data integrity and supports various accounting functions. After the database design is carried out, the next step is the development and design of the User Interface. This design must be made more intuitive, user-friendly so that management and employees can easily carry out data processing. This interface also supports the data validation process to reduce errors when inputting data, such as using data format checking, validation and data consistency features. Utilization of API (Application Programming Interface) technology is a middleware technology used as interaction between software to be able to communicate and exchange data, both features and functionality. This integration must be tested through various scenarios in different cases so that various

situations can be handled. In conclusion, by designing employee data applications integrated with the Accounting Information System, it becomes a strategic step that helps companies to increase operational efficiency and effectiveness. Employee data entered into the Accounting Information System must be ensured to be more accurate and up-to-date. Companies can reduce errors that occur during the payroll process, improve accounting for financial reports and become a benchmark for management for decision making. So through this implementation it becomes an illustration that application design and implementation can maximize the benefits that can be obtained.

METHOD

The design of employee data applications in companies currently includes online use by utilizing a web browser application so that there is cost efficiency in terms of infrastructure availability. Companies can utilize cloud computing technology or provide servers with intranet or internet networks. Information system design is a very complex process and involves various stages of activities starting from needs analysis, system design to implementation and evaluation. Laudon and Laudon (2020) expressed the opinion that a good information system must be able to integrate elements within the company to increase operational efficiency and decision making.

The stages of information system design consist of:

1. Needs Analysis
   In this section, designing employee data applications includes needs analysis. According to O'Brien and Marakas (2021), needs analysis involves collecting information about user needs and understanding existing business processes.
2. System design
   Next is system design which includes system architecture design, database and user interface. According to Stair and Reynolds (2021), good application design must consider factors such as scalability, security and user friendliness.

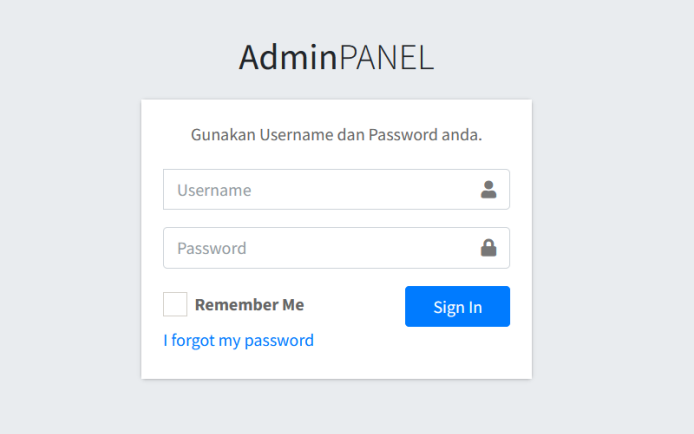

Figure 1. Login Admin

3. Implementation and evaluation
   This stage includes infrastructure development activities such as system design based on the design that has been created as well as testing to ensure the application functions run well. According to Turban et al. (2022), system evaluation should include functionality,

security, and performance testing to ensure that the system can meet user needs and operate efficiently.

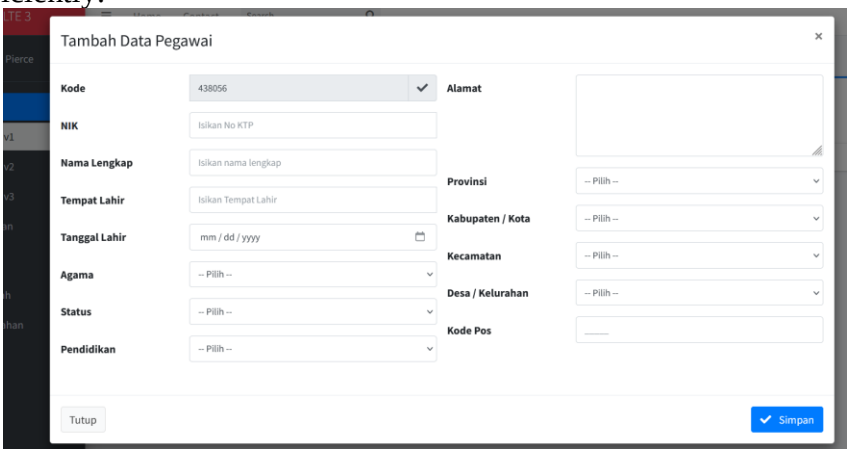

Figure 2. Registtration Form

RESULTS

Needs Analysis

The results of the needs analysis show that there are several main problems in the old employee data and accounting information management system, including data duplication, errors in salary calculations, and delays in financial reporting. The main needs identified are:

Employee Data Management:

The system must be able to store and manage employee data efficiently, including personal information, employment history, and performance appraisals. The design of the employee data application consists of several parts including Admin users and Personnel Operators. According to Rahmat (2024) These two roles have different access rights and authorization, such as managing user data, job title data, family and so on. In the employee profile there is also data such as completeness of documents including NIK / KK which is used for reporting and exercising employee rights such as Health Insurance.

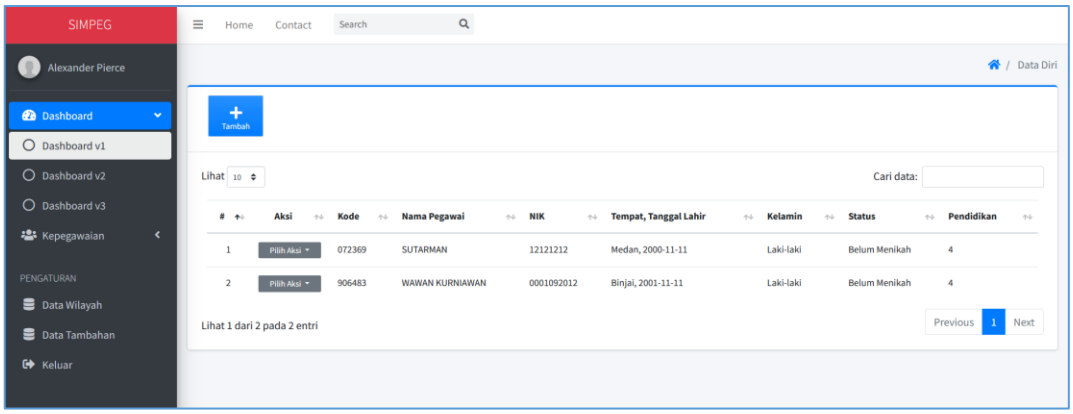

Figure 3

Payroll Integration: The system needs to automate the process of calculating salaries based on attendance, overtime and allowance data. Time and Labor transmits the payable time created by the Time Administration process to a payroll application, such as Payroll for North America or Global Payroll. The payroll application compensates time reporters for their payable time and—at the end of the pay run—sends labor-related costs back to Time and Labor, where they are distributed across payable time and made available to Project Costing and other applications.

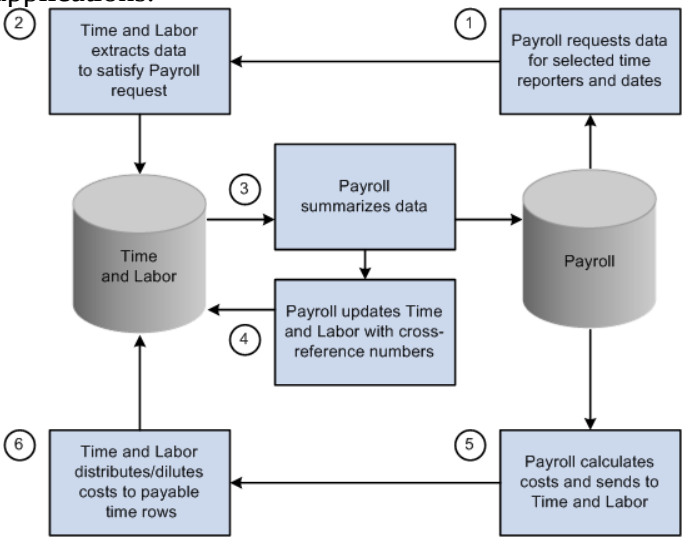

Figure 4

Before using your payroll system to pay employees for time reported in Time and Labor, you must integrate your systems. This entails: Mapping time reporting codes (TRCs) to your payroll system's earnings codes. electing settings on various pages within Time and Labor, your payroll system, and PeopleSoft Human Resources.

Financial Reporting

The system must provide features to produce accurate and timely financial reports.

System Design

The system design includes several main components, namely:

1. System Architecture
   The system is designed with a service-oriented architecture to ensure modularity and scalability.
2. Database Design
   Relational databases are designed to manage employee data and accounting transactions with main tables such as employees, salaries, benefits and transactions.
3. User Interface
   The interface was designed with a focus on ease of use and accessibility, using the React framework for high responsiveness and interactivity.

Implementation

System implementation involves several technical steps, including: Backend Development: The backend was developed using Django, which allows efficient management of data and business logic. Frontend Development: The frontend is developed using React, which allows creating dynamic and responsive user interfaces. API Integration: API is used to integrate employee data modules with accounting modules, enabling real-time data exchange.

Evaluation

The system evaluation showed positive results in several aspects: Performance: The system shows significant improvements in operational efficiency, with faster data processing times compared to legacy systems. Security: The system is equipped with security features such as two-factor authentication and data encryption, which ensures protection against unauthorized access. User Test: Feedback from users shows a high level of satisfaction with the ease of use and reliability of the system.

DISCUSSION

Integration of Employee and Accounting Data

One of the important results of implementing this system is seamless integration between employee data and the accounting information system. This integration allows for more efficient data management and reduces the risk of errors that often occur in manual processes. According to Laudon and Laudon (2020), information system integration can improve data accuracy and operational efficiency, which is reflected in the results of this system evaluation.

Increased Operational Efficiency

By automating processes such as salary calculations and financial reporting, this system successfully reduces manual workload and increases operational efficiency. O'Brien and Marakas (2021) state that integrated information systems can save time and costs, and allow staff to focus on strategic tasks.

Ease of Use

Intuitive and responsive interface design is one of the key factors in increasing user satisfaction levels. Stair and Reynolds (2021) emphasize the importance of user-friendly design to ensure that information systems can be used effectively by users of various skill levels.

Challenges and Solutions

Although the evaluation results show many positive aspects, there are several challenges faced during the implementation process, including:

1. Integration Complexity: Integration between employee and accounting data modules requires careful coordination and extensive testing to ensure that data can be exchanged correctly.

2. Data Security: Ensuring data security in an integrated system is a big challenge. Implementing encryption and two-factor authentication is an important step in overcoming this challenge.

CONCLUSION

The design and implementation of an employee data application that is integrated with an accounting information system has succeeded in increasing operational efficiency, data accuracy and user satisfaction. The results of this study show that with a systematic design approach and a focus on user needs, companies can achieve significant benefits from information systems integration.

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