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Analysis and Improvement of Payroll Systems Using Agile Methods to Achieve Efficiency and Fairness

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Abstract: ***In today's dynamic business environment, the success of an organization hinges not only on the quality of its products or services but also on the efficiency and equity inherent in its employee payroll system. This research elucidates the imperative behind the transformation of corporate payroll systems in response to the rapid evolution of industry dynamics and the escalating complexity of employee requisites. The primary objective of this study is to conduct an in- depth analysis of the payroll system employed by PT Kefsone, a dynamically growing enterprise, with a specific emphasis on augmenting operational efficiency and instituting equitable compensation distribution practices. The comprehensive analysis encompasses an exploration of the evolving demands of the workforce, an evaluation of methodologies for performance assessment, and a critical review of remuneration structures and incentive policies. The findings of this research underscore the substantial impact that components affecting fairness and efficiency within PT Kefsone payroll system exert on workplace productivity, employee retention, and overall morale. Moreover, the study presents actionable recommendations for system enhancement, thoughtfully tailored to align with the company's requirements and the expectations of its workforce.***

Keywords: Payroll System; Payroll Analysis; Payroll System Evaluation; Compensation Policy Effectiveness; Performance Assessment.

I. INTRODUCTION

Payroll management is a pivotal aspect of human resource management, occupying a central role in ensuring organizational efficiency and equity [1]. An effective and transparent payroll system not only impacts employee motivation and contentment but also exerts a profound influence on overall organizational productivity and performance [2]. Consequently, companies must continually invest in the development and enhancement of their payroll systems to bolster efficiency [3]. In the pursuit of growth and development, companies regard Human Resources (HR) as an indispensable component of their journey [4]. The performance of high-caliber employees is inextricably linked to the progress and prosperity of the organization [5]. An efficient and equitable payroll system is paramount for the uninterrupted continuity of business operations.

PT Kefsone, a dynamic and burgeoning enterprise, recognizes the paramount significance of constructing a payroll system that not only upholds efficiency but also ensures equitable treatment for all employees. To embark on this crucial path, a meticulous examination of the present payroll system is imperative. This scrutiny seeks to unearth opportunities for improvement that can enhance operational efficiency and foster a just distribution of compensation [6]. An efficient payroll system optimally allocates each budget component, while an equitable system enhances employee motivation and satisfaction [7] Therefore, the strategic evolution of the payroll system is guided by data-driven insights [8]. Several compelling factors underscore the necessity for the analysis and improvement of PT Kefsone payroll system. By assessing its impact on employee productivity and satisfaction, this study endeavors to elucidate how constructive changes in the payroll system can cultivate a more harmonious and productive work environment.

The primary objective of this research is to scrutinize and assess the measures undertaken by PT Kefsone to enhance efficiency and equity within their payroll system. This case study aims to delineate the challenges encountered by organizations in payroll management and the strategies employed to surmount these challenges [9]. Qualitative data collection methods and interviews with company management form the cornerstone of data acquisition in this research.

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Throughout the investigative process, several issues within PT Kefsone's payroll system have come to light, including inefficiencies in salary calculations, the opacity of salary policies, and a lack of transparency in determining criteria for salary increments [10]. Armed with these insights, the organization is taking strategic strides towards refining the efficiency and fairness of their payroll system.

One approach undertaken by PT Kefsone involves the integration of technology through the implementation of a computer-based payroll system seamlessly interfaced with a human resource management system [11]. Additionally, the company has introduced a more transparent and equitable salary policy, underpinned by objective criteria for determining salary increments, such as employee performance and tenure [12]. In this case study, the efficacy of these transformations is evaluated through the analysis of employee performance data and their satisfaction levels with the revised payroll system. This research holds substantive significance within the realm of human resource management, specifically in the domain of payroll management. By unraveling the challenges faced by organizations and the strategies employed by PT Kefsone, this study offers invaluable insights to other companies seeking to augment efficiency and equity within their payroll systems.

II. RESEARCH METHOD

The research methods used include application development methods. In the application development stage, Analysis and Improvement of the Payroll System uses the Agile Development method [9]. The Agile method is an approach to software development or project management that emphasizes team collaboration, flexibility, and responsiveness to changing client needs [10]. This method is usually used in software development. Agile Development is an approach to software development that is based on similar principles or tiered system development that requires developers to quickly adapt to changes in any form.

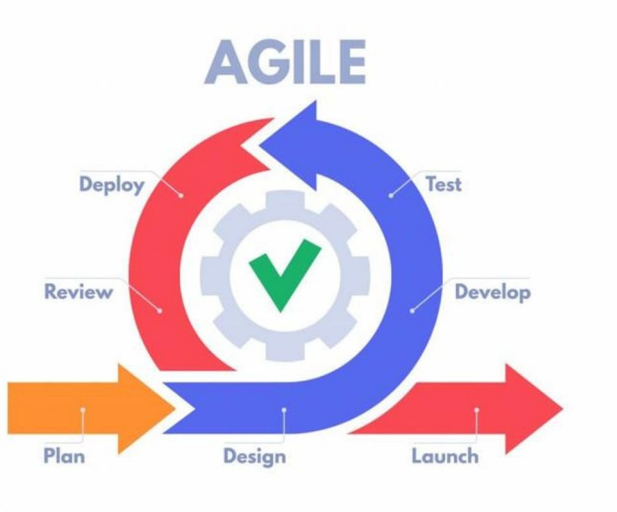


Figure 1. Metode Agile Development

It is clear in Figure 1 how the stages of Agile are as follows:

1) The planning stage involves collecting data from users through direct interviews or observations to identify the desired system requirements [11] Next, the system developer will create a comprehensive design using Use Cases and Activity Diagrams.
2) Design At this stage the author carries out physical process design, system architecture design, interface design, database and file design and program design [12].
3) The development stage (Develop) is carried out iteratively and collaboratively. The team works together to implement the payroll system features that have been designed. A focus on responsive and continuous development enables rapid adaptation to changing user needs.
4) Testing: This stage is where the construction and installation testing process is carried out after the system is created. The testing phase includes unit, integration, and functional testing [13]. The goal of this testing is to ensure system reliability and find problems that could compromise efficiency and fairness.
5) Deployment (implementation) of the new payroll system is carried out in stages. A rollout occurs after a feature or change has been tested and approved. This approach minimizes risk and ensures operational continuity when deploying a new system.

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6) Review Development results can be assessed at the inspection stage. The team conducted a retrospective evaluation to find out whether the new salary system was effective and fair and whether it met the initial objectives. Additionally, the opinions of stakeholders and users are taken into consideration.

Lunch (launch) is an official step towards implementing an improved payroll system. During the launch, the team gave users a good understanding of the features and changes made. To ensure successful adaptation, intensive monitoring and support was undertaken during the rollout. An iterative and responsive approach helps reduce risk, increase transparency, and ensure that payroll systems remain relevant and effective over time. By applying Agile methods for payroll system analysis and improvement, this process becomes more adaptive to changing business needs and focuses more on providing added value quickly while maintaining efficiency and fairness [14].

III. RESULT AND DISCUSSION

A. Results

Having implemented Agile methods to analyze and improve the payroll system increased operational efficiency. The iterative approach allows the team to find problems or obstacles in the payroll process quickly. The result is faster payroll cycles, more efficient processes, and less administrative work. Agile methods allow teams to focus on fair distribution of compensation. Individual needs are better met with ongoing participation from user teams and stakeholders. Improved pay systems include clear performance appraisals, consideration of employee needs, and quick remediation mechanisms if inequities exist. Agile methods have shown to be a responsive solution to address changing company needs. Teams can adjust payroll systems quickly when regulations, internal policies, or employee needs change during the development cycle. This allows companies to ensure that payroll information remains available and accurate as the business environment changes. Actively involving employees in the payroll system improvement process has a positive impact on employee engagement and satisfaction. The use of Agile methods in payroll system development creates space for regular feedback from employees, allowing companies to better understand their needs and expectations. Create a friendlier work environment and encourage employees to contribute to achieving common goals.

A retrospective cycle implemented at the end of each iteration allows the team to conduct a thorough assessment of the payroll process and results. Identification of problems and successes helps plan continuous improvement. The results of these evaluations also improve team learning, form the basis for better decision making, and improve the team's ability to cope with change. As a result, analysis and improvement of Agile payroll systems results in a more efficient, fair, and responsive environment. Which has a positive impact on productivity, employee satisfaction, and the overall health of the organization. After identifying user needs through the use case in Figure 2, the team conducted a sprint analysis after finding user needs from the use case to determine the backlog of features to be used [15]. In the revised payroll system, operational steps are depicted in activity diagrams. The result is increased efficiency, demonstrated by time saved in payroll cycles and optimized processes. By creating use cases that cover various situations and employee profiles to create a payroll system that considers fairness factors. The activity diagram in Figure 3 helps show how the system assesses performance and processes compensation based on these variables [16]. In implementation, use cases show situations where the system meets individual needs, and activity diagrams show clear and fair decision-making steps [17].

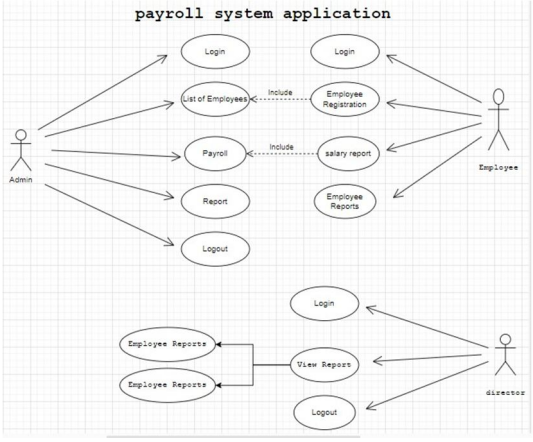


Figure 2. Use Case for Payroll System Application

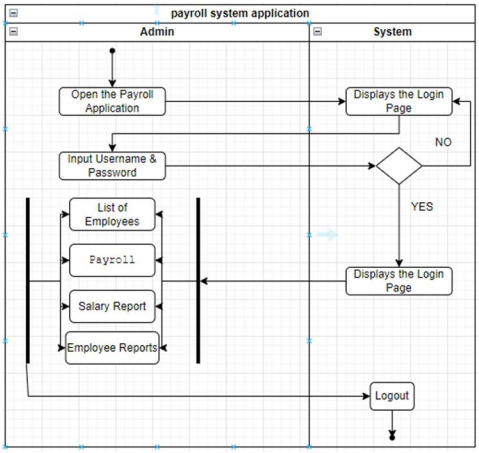
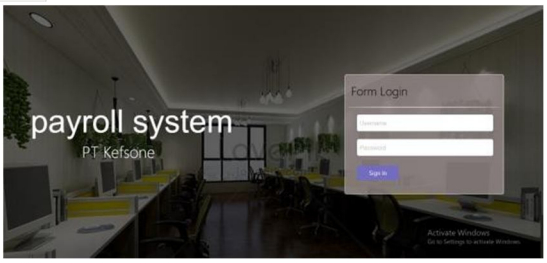
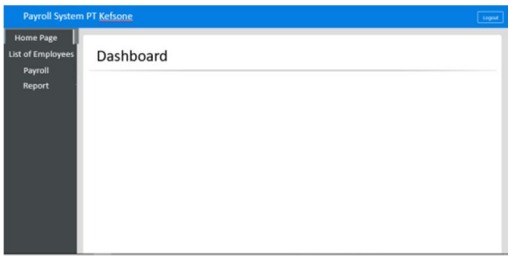


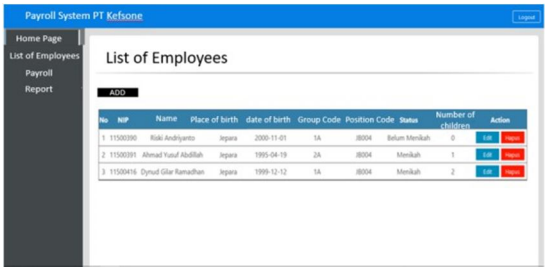
Figure 3. Activity Diagram of Payroll System Application



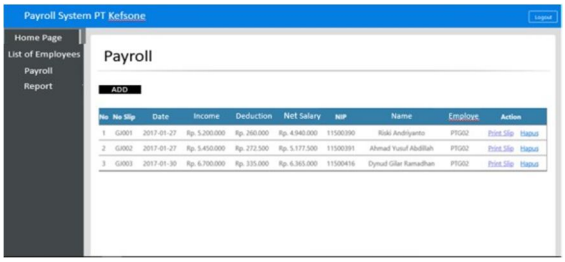
(a) Login Page



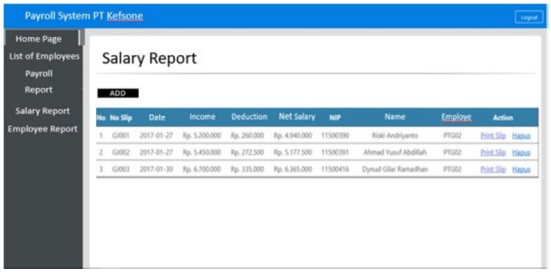
(b) Application Home View



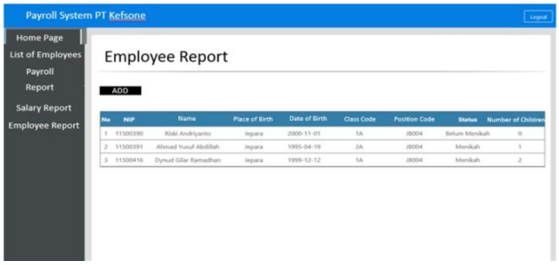
(c) Employee List Display



(d) Payroll View



(e) Salary Report View



(f) Employee Report View

Figure 4. App View

In the application's user interface, we have various views and functionalities as illustrated in Figure 4. The first view is the Login Page, where users are prompted to enter their username and password to access the system. Upon successful login, users are directed to the Application Home View. Within the Application Home View, users are presented with a menu system consisting of six main options. The first is the System main page (HOME), which serves as the central hub for navigation. The second option leads to the Employee List Display, allowing users to input, edit, delete, and view a list of employee data. The third menu choice leads to the Payroll View, which is responsible for calculating employee salaries based on income, deductions, and net salary. Users can also create employee salary records and generate salary slips from this view. Moving on, the fourth option takes users to the Salary Report View, where comprehensive information regarding employee payroll is documented. This report includes details on income, deductions, and the total net income received by employees over a specified period. Lastly, the fifth option leads to the Employee Report View, which provides detailed insights into employee data and status at PT Kefsone. This report encompasses various aspects such as the total number of employees, demographic data, and information on employee development. To conclude, users can log out of the system by selecting the sixth option, the Logout menu, after they have completed their tasks within the application. This user-friendly interface is designed to efficiently manage employee data, payroll, and reporting for PT Kefsone.

B. Discussion

Implementing Agile methods in processes and improving payroll system analysis has resulted in significant operational efficiency improvements. An iterative approach allows time to quickly identify problems or bottlenecks in the payroll process, resulting in faster payroll cycles, more efficient processes, and reduced administrative workload. Additionally, Agile methods allow time to focus more on achieving fair distribution. Continuous participation from user teams and stakeholders has helped better meet individual needs. Improvements in the payroll system include more transparent performance appraisals, consideration of employee needs, and quick remediation mechanisms if any injustice is detected. Additionally, Agile methods have proven to be a responsive solution to address changing company needs.

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Teams can quickly adjust payroll systems as regulations, internal policies, or employee needs change during the development cycle. This ensures that payroll information remains available and accurate as the business environment changes. The active involvement of employees in the payroll system improvement process has a positive impact on employee engagement and satisfaction. The use of Agile methods in payroll system development creates space for regular feedback from employees, which allows companies to better understand their needs and expectations, creates a friendlier work environment, and encourages employees to contribute to achieving common goals. Additionally, a retrospective cycle implemented at the end of each iteration allows time for a thorough evaluation of the payroll process and its results.

Identification of problems and successes helps plan continuous improvement. The results of this evaluation also improve team learning, provide the basis for better decision making, and increase the team's ability to deal with change. As a result, Agile payroll system analysis and improvements result in a more efficient, fair, and responsive environment. This has a positive impact on productivity, employee satisfaction, and the well-being of the entire organization. The implementation of Agile methods in payroll management systems has brought significant positive changes in payroll processes and functions, helping companies achieve greater efficiency, greater fairness, and higher employee engagement.

IV. RELATED WORK

A few related studies have been carried out in various aspects of payroll system development and the application of Agile methods. Alda (2023) developed an Android mobile-based payroll application using the Agile method which focuses on mobility [1]. Suhari, Faqih, and Basysyar (2022) explained the application of the Agile method in developing personnel information systems at the CV company. Angkasa Raya [2]. Ayunita Pertiwi et al. (2023) demonstrated the use of Agile Software Development in designing a web-based attendance information system [3]. Setiawan (2019) discusses project management in the context of developing a web-based payroll system [4]. Indah Melyani, Rosita, and Aji (2023) describe the development of a web-based payroll information system using Agile Software Development and the Laravel framework [5]. Soer, Fauziah, and Nursida (2023) explained the application of the Agile Development method in developing a 125 kHz RFID-based employee attendance information system [6]. Handayani et al. (2023) designed a web- based inventory information system using the Agile Software Development method [7]. Nurzaman (2020) noted the development of a billing automation system using the Agile Software method [8]. Dini, Si, and Ak (2022) conducted an analysis of internal control of the payroll system using the COSO approach on CV XYZ [9]. Hindarto (2023) expands understanding of the role of e-commerce in increasing sales by using Unified Modeling Language (UML) [10]. Hindarto and Hariadi (2023) designed an information system at the FGH shop using UML [11]. Hindarto (2023) describes the design of an Indonesian culinary application system using UML [12]. Previous research has carried out payroll system development, application of Agile methods, and development of web-based systems in various industrial and field contexts. This research describes the development of a payroll system using an Agile approach which aims to increase efficiency and fairness in compensation distribution.

V. CONCLUSION

In conclusion, the research conducted on payroll system applications has demonstrated the substantial advantages of utilizing such applications in enhancing efficiency and fairness within a company's employee payroll management. Employing Agile methods for the analysis and improvement of payroll systems represents a significant shift in the realm of human resource management. It enables organizations to enhance the efficiency and equity of their employee payroll procedures by prioritizing adaptability, team collaboration, and ongoing iterations. This approach not only optimizes payroll processes but also contributes to fostering a more equitable and responsive work environment, ultimately benefiting both the organization and its employees.

REFERENCES

[1] Alda, M., 2023. Pengembangan Aplikasi Penggajian Karyawan Dengan Menggunakan Metode Agile Berbasis Mobile Android. Komputika: Jurnal Sistem Komputer, 12(1), pp.43-51. DOI: https://doi.org/10.34010/komputika.v12i1.8030.

[2] Suhari, S., Faqih, A. and Basysyar, F.M., 2022. Sistem Informasi Kepegawaian Mengunakan Metode Agile Development di CV. Angkasa Raya. Jurnal Teknologi dan Informasi, 12(1), pp.30-45. DOI: https://doi.org/10.34010/jati.v12i1.6622.

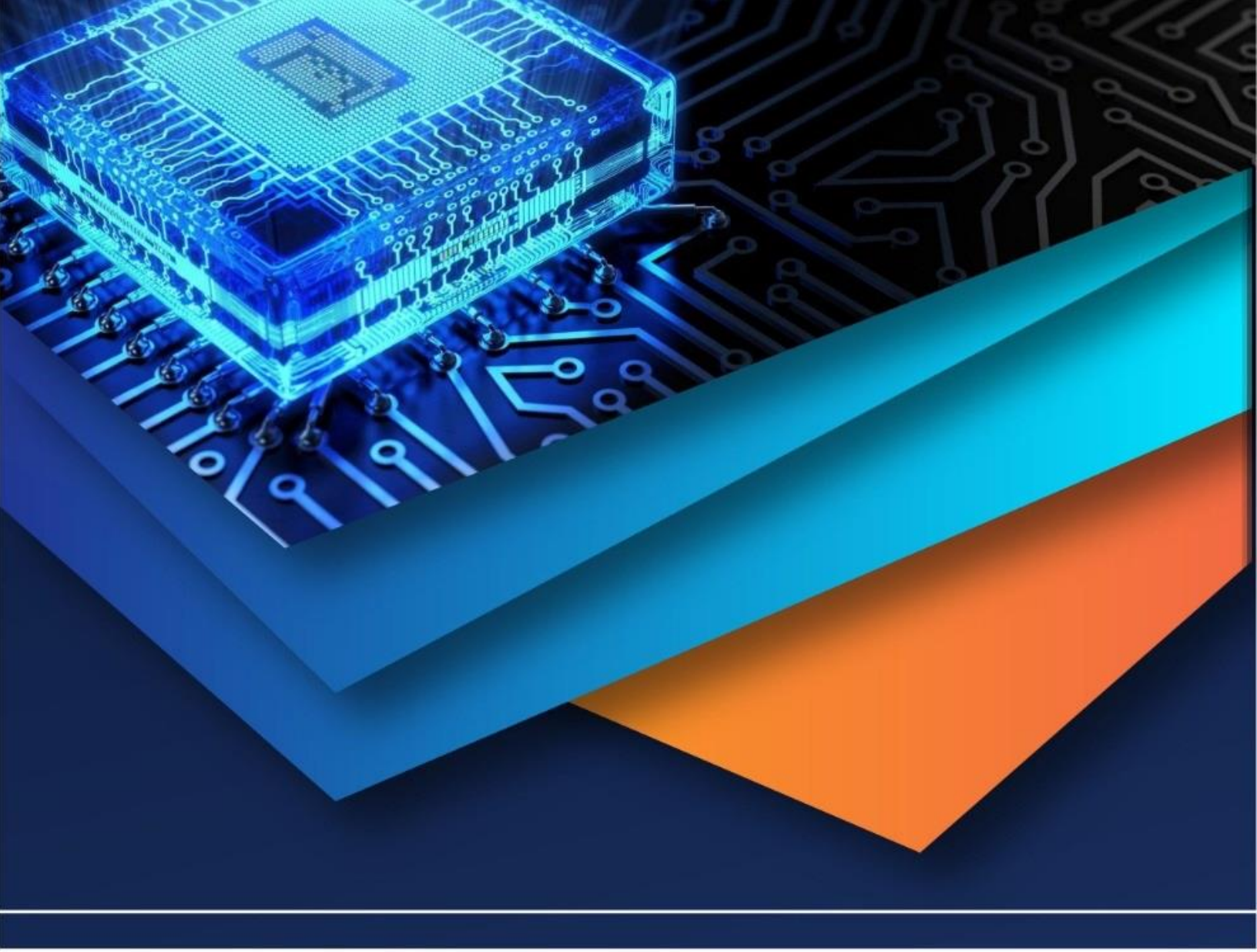
[3] Pertiwi, T.A., Luchia, N.T., Sinta, P., Dahlia, A., Fachrezi, I.R., Aprinastya, R. and Hamzah, M.L., 2023. Perancangan Dan Implementasi Sistem Informasi Absensi Berbasis Web Menggunakan Metode Agile Software Development. Jurnal Testing Dan Implementasi Sistem Informasi, 1(1), pp.53-66.

[4] Hindarto, D., 2023. Enhancing Road Safety with Convolutional Neural Network Traffic Sign Classification. Sinkron: jurnal dan penelitian teknik informatika, 8(4), pp.2810-2818. DOI: https://doi.org/10.33395/sinkron.v8i4.13124.

[5] Utomo, A.G. and Santoso, H.A., 2009. Pengembangan Sistem Penggajian Pada Dinas Pemadam Kebakaran Kota Semarang Berbasis Objek. Available at: http://eprints.dinus.ac.id/17056/1/jurnal_16421.pdf.

[6] Hindarto, D., 2023. Comparison of RNN Architectures and Non-RNN Architectures in Sentiment Analysis. Sinkron: jurnal dan penelitian teknik informatika, 8(4), pp.2537-2546. DOI: https://doi.org/10.33395/sinkron.v8i4.13048.
[7] Yapan, U.F. and Itmaanna, E., 2021. Rancang Bangun Sistem Informasi Pendataan Gaji Pegawai Pada Kodim 0411 Lampung Tengah Berbasis Web. Jurnal Alih Teknologi Sistem Informasi (JATSI), 1(2).
[8] Setiawan, E., 2019. Manajemen proyek Sistem Informasi Penggajian Berbasis Web. Jurnal Teknik, 17(2), pp.84-
[9] 93. DOI: https://doi.org/10.37031/jt.v17i2.50.
[10] Melyani, R.I., Rosita, R. and Aji, S., 2023. Pengembangan Sistem Informasi Penggajian Berbasis Web Menggunakan Framework Laravel dengan Metode Agile Software Development. Jurnal Sistem Informasi Akuntansi (JASIKA), 3(1), pp.31-36. DOI: https://doi.org/10.31294/jasika.v3i01.2195.
[11] Soer, U.D., Fauziah, S. and Nursida, I., 2023. PENGEMBANGAN SISTEM INFORMASI ABSENSI KARYAWAN BERBASIS RFID 125 KHZ MENGGUNAKAN METODE AGILE DEVELOPMENT PADA PT.
[12] SANLY INDUSTRIES. Jurnal Indonesia: Manajemen Informatika dan Komunikasi, 4(1), pp.58-69. DOI: https://doi.org/10.35870/jimik.v4i1.110.
[13] Lubis, F.A.S., Lubis, S.S. and Hendrik, B., 2023. Perancangan Sistem Inventory Untuk Stok Barang Herbisida Pada UD. Anugrah Jaya Tani Dengan Bahasa Pemrograman PHP dan Database MySql. Jurnal Sains Informatika Terapan, 2(2), pp.50-55.
[14] Nurzaman, F., 2020. PENGEMBANGAN SISTEM OTOMATISASI TAGIHAN MENGGUNAKAN METODE
[15] AGILE S OFTWARE 1 DEVELOPMENT. IKRA-ITH Informatika: Jurnal Komputer dan Informatika, 4(1), pp.46-57.
[16] Aliffudin, H. and Santoso, N., 2023. Pengembangan Aplikasi E-Portfolio berbasis Website. Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer, 7(4), pp.1633-1640.
[17] Fajarsari, I.M. and Dini, M., 2022. Analisis Pengendalian Internal Sistem Penggajian Menggunakan Pendekatan Coso Pada CV XYZ. Jurnal Akuntansi dan Bisnis, 8(1).
[18] Hindarto, D., 2023. The Role of E-Commerce in Increasing Sales Using Unified Modeling Language. International Journal Software Engineering and Computer Science (IJSECS), 3(2), pp.120-129. DOI:
[19] https://doi.org/10.35870/ijsecs.v3i2.1503.
[20] Hindarto, D. and Hariadi, M., 2023. Information System Design at FGH Stores with Unified Modelling Language. Journal of Computer Networks, Architecture and High Performance Computing, 5(2), pp.623-633. DOI:
[21] https://doi.org/10.47709/cnahpc.v5i2.2702.
[22] Hindarto, D., 2023. Indonesian Culinary Application System Design with UML Method. Journal of Computer Networks, Architecture and High Performance Computing, 5(2), pp.612-622. DOI: https://doi.org/10.47709/cnahpc.v5i2.2675.

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