Accounting Information System using Midtrans Payment Gateway for Sport Equipment Business

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Abstract— This study aims to implement an integrated Accounting Information System (AIS) with Midtrans payment gateway at Toko Sahabat, a sports equipment store in Semarang, Indonesia. Through primary and secondary data collection, including interviews, direct observation, and documentation analysis, this study aims to analyze the accounting challenges faced by Toko Sahabat and design solutions accordingly. The results show that AIS implementation brings significant benefits in inventory management, transaction recording, and financial statement preparation, giving stores a competitive advantage in an increasingly competitive business environment.

Keywords— accounting information system, inventory management, payment gateway, purchase, sales

I. INTRODUCTION

Sport is one of the fastest-growing industries, as it has links with various aspects such as economics, media, clothing, food, and advertising. Sport is present in various aspects of life and is supported by a never-ending stream of revenue[1]. The sports industry is a sustainable sector, as sport has become an important part of people's lives today. As long as sports activities remain, the sports industry will continue to develop well. The transformation of the sports world has reached an industrial level, which can be seen from the growth of products such as sports shoes, sportswear, and sports equipment that are increasingly abundant. This progress should benefit players in the sports industry. The role of sports is not limited to physical and mental health benefits or as a competition event. Still, it can also be a source of income for those involved, which can be used to meet their needs[2].

The technology revolution presents a challenge for enterprises to establish a competitive advantage and excel in their fields. Organizations require a successful accounting information system to achieve strategic, competitive, and business objectives[3]. Accounting information system aims to collect and record data on events that have an economic influence on enterprises. It processed data and communicated the results to both internal and external stakeholders [4].

Accounting information is an important instrument in information and technology, not only for financial controls but also for measuring performance management. Accounting information has gained popularity as a proxy phrase for performance management [5]. Accounting information systems were developed to improve financial control and management through technological advancements [6].

The utilization of accounting information systems provides opportunities for business people to increase efficiency and effectiveness in the decision-making process, which in turn allows companies to gain a competitive advantage[7].

Toko Sahabat is one of the stores engaged in the sale of sports equipment and is located on Jl. Parang Klitik Raya No. 14, Semarang. Toko Sahabat currently does not have complete accounting records to support store operations. Based on the results of interviews conducted with the owner of Toko Sahabat,

some of the problems faced by Toko Sahabat include the absence of inventory records so that stock orders are made when they see that the inventory is running low and do not know the reason for the exhaustion of stock, whether it is sold or lost. Not having inventory records also has an impact on a lack of understanding of inventory, which can result in running out of stock when there is consumer demand. In addition, Toko Sahabat only has sales notes as source documents and proof of transactions and does not keep accounting records for all financial transactions that occur, including cash, sales, and purchase transactions. Toko Sahabat has also not produced financial reports, so there is no accurate information about the company's profits, losses, or financial position.

To reduce these risks, Toko Sahabat must have complete records, which include inventory, transactions, and financial records. This will help the owner make decisions. To avoid problems that can arise related to consistency and accuracy in recording, a website-based accounting information system is a strategic solution for improving efficiency, accuracy, and transparency in the company's financial management. Therefore, it is necessary to develop a website-based accounting information system that suits the needs and characteristics of Toko Sahabat.

Digital transformation is the process of integrating digital technology into all aspects of an organization, significantly altering how it runs and provides value to its consumers[8]. One aspect that is also important for business people in the digitalization era is the integration of electronic payments[9]. The term "electronic payment" describes the process of conducting financial transactions by electronic means, including digital wallets, mobile payments, and internet banking. Studies have demonstrated that digital payment has a favorable and significant impact on finance performance, particularly for small and medium-sized firms (SMEs) in Indonesia[10].

To meet these demands, researchers chose to integrate Midtrans into the accounting information system developed as a reliable and secure payment solution. Midtrans is a payment gateway that enables online transactions for a variety of businesses and services. Applications for it include digital marketplaces[11], e-ticketing for metaverse events[12], online payment information systems for schools[13], and new student admittance systems[14]. Midtrans is well-known for its security and anti-fraud procedures, making it an ideal choice for organizations wishing to deploy online payment solutions[15].

The use of Midtrans in Toko Sahabat's accounting information system is not just a payment method but a strategic step to improve transaction efficiency and security. Midtrans makes it easy to accept various types of payments, especially e-wallets and QRIS, which are popular payment methods today. This not only optimizes the customer experience but also accelerates Toko Sahabat's accounting process, making it more transparent and manageable.

Researchers will apply the Rapid Application Development (RAD) method to developing an accounting information system for Toko Sahabat. Rapid Application Development (RAD) is a software development methodology that prioritizes short, iterative development cycles and user participation. It is intended to reduce the time and cost of developing and deploying applications while maintaining high quality and user satisfaction levels. RAD is particularly helpful for designing applications in a fast-changing environment, where quick adaptability to new needs and user feedback is crucial[16], [17].

Given this context, the significance of developing a web-based accounting information system for Toko Sahabat Sport

becomes evident. This system allows for automated transaction recording, real-time stock monitoring, and quick and accurate financial reporting. In addition, interested parties can quickly access the financial information stored in this system.

In line with the rapid development of the sports industry, sporting goods stores such as Toko Sahabat must adapt to advances in information technology in order to remain competitive. Therefore, this research aims to design and develop a website-based accounting information system that accommodates the special needs of Toko Sahabat. With the implementation of this system, it is expected that Toko Sahabat can improve their operational efficiency, minimize errors, and provide better service to customers.

II. METHOD

The object of research is Toko Sahabat, which is a shop that sells sports equipment located on Jl. Parang Klitik Raya No.14, Tlogosari Kulon, Kec. Pedurungan, Semarang City, Central Java 50196.

In this study, both primary and secondary data sources are utilized. Primary data consists of interview results with store owners and employees, as well as direct observation of the store's business processes. Secondary data includes sales and purchase receipts from the store. Data collection techniques encompass interviews, providing insights into current business processes and potential technical challenges. Observations offer a deeper understanding of the accounting process and organizational characteristics influencing system design. Documentation analysis involves gathering information from various written sources such as financial reports and contracts, aiding in the development of applications tailored to the company's needs, optimizing processes, and ensuring compliance with regulations.

III. RESULTS AND DISCUSSION

A. RESULT

Toko Sahabat's main problem is that it does not keep proper inventory records, and there is no accounting record for all types of transactions. Furthermore, the company does not have financial statements, so there is no information regarding profit and loss or the company's financial position. As a result, the accounting information system will be designed to address these issues. The system will start with transaction recording and eventually generate financial statements based on the transactions recorded.

Entity Relationship Diagram

Figure 1 is an Entity Relationship Diagram design that illustrates the structure of entities and the relationships between their attributes in the Toko Sahabat accounting information system. In the design there are seventeen tables representing different entities and each entity has its own attributes that reflect information about that entity. The relationship between these tables is indicated by arrows connecting primary keys and foreign keys.

Figure 1. Entity Relationship Diagram

Use Case Diagram

Figure 2 is a use case diagram depicting the roles and interactions of each actor or user in the system. In the diagram, there are four actors involved: superadmin, sales, purchase, and cashier. A superadmin is an entity that has full access to the system and is responsible for the overall management of the application. A sales actor is an entity involved in the process of selling goods or services to customers. While purchasing actors are entities involved in the process of purchasing goods or services from suppliers. Lastly, the cashier is the actor responsible for managing cash expenditures.

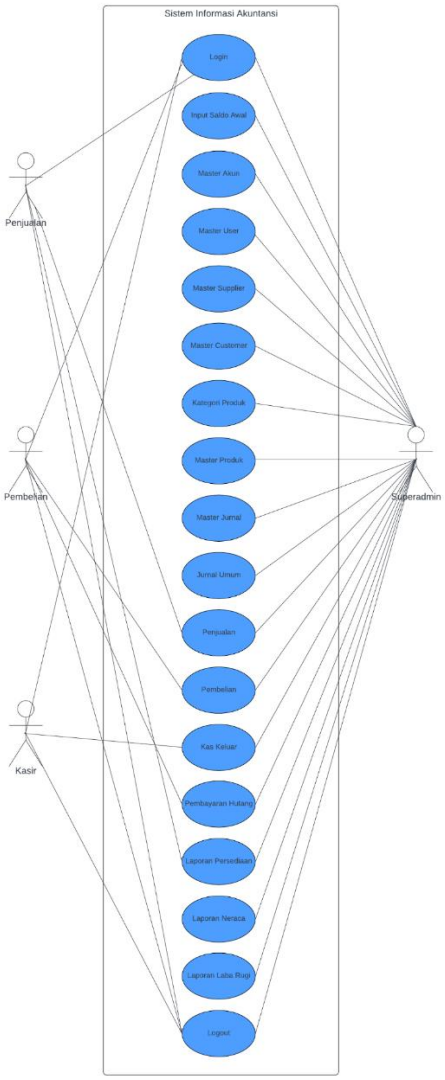

Figure 2. Use Case Diagram

Implementation of accounting information system

The dashboard, shown in Figure 3, is the main screen to which users are led following successful login. The dashboard will display several summaries of transactions that occurred in the current period The sidebar displays the menu options available in the system. The menu will be segmented as master data, transaction, initial balance, and report. The transaction menu will be our main emphasis. The transactions menu includes five sub-menus: general ledger, purchase, sale, cash expenditure, and debt payment transactions.

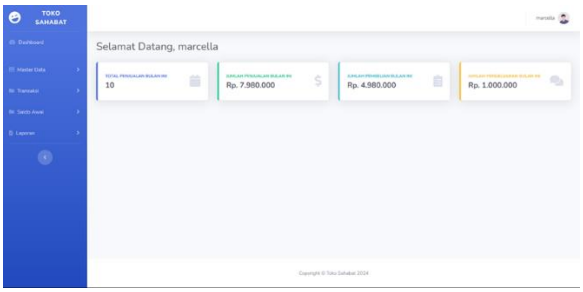

Figure 3. Dashboard Page

Before beginning a new transaction, whether purchasing or selling, users must ensure that all relevant information, such as products, suppliers, and consumers, is recorded. If it has not yet been recorded, the user can add it first from the master data menu. If it has been added, users will be able to add new transactions.

To create a new purchase transaction, users can access the purchase sub-menu and then press the add button, as shown in Figure 4. The Add button redirects users to the create new purchase order form, where they can enter new purchase order.

After receiving the goods, the owner will determine whether the amount and quality are appropriate. If an issue is discovered and they wish to return the item, they can record it by pressing the return button, as shown in Figure 4, according to the purchase invoice number and filling out the return form.

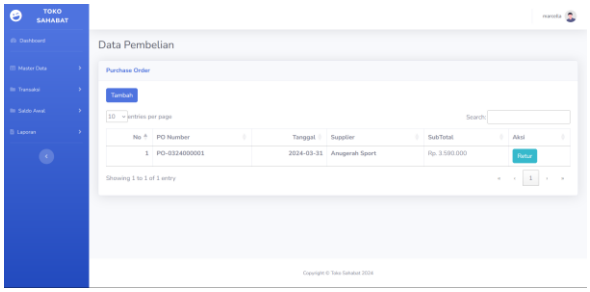

Figure 4. Purchase Order Page

If the purchase is made with debt, the purchase information will appear in the debt payment sub-menu. The debt payment sub-menu, as shown in Figure 7, displays all purchase transactions that have not yet been paid off.

If user want to pay in installments or pay off the debt, they can do so by clicking the pay button next to the invoice number, as shown in Figure 5, and filling out the form to record the payment date and nominal. If the payment filled in is equal to the nominal debt, the system will automatically update the debt status to be paid off and will not be displayed on the debt data page.

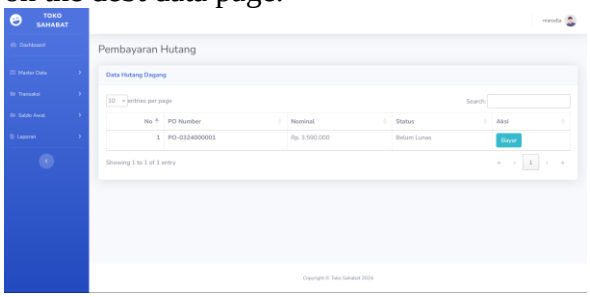

Figure 5. Debts Data Page

To add a new sales transaction, users can press the add button on the sales page as shown in Figure 6.

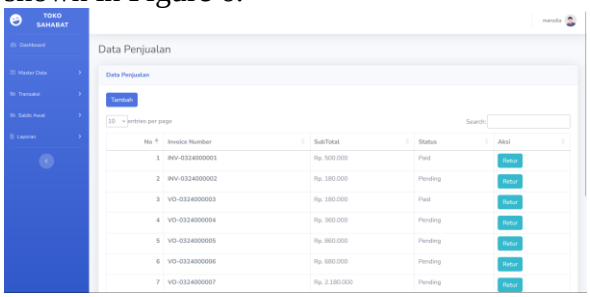

Figure 6. Sales Data Page

After the sales form appears, as shown in Figure 7, users can fill out the sales form and press the submit button.

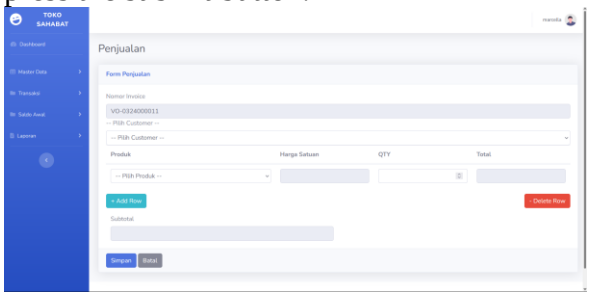

Figure 7. Sales Form

When the submit button is pressed, the data will be automatically saved and the user will be directed to a checkout page, as shown in Figure 8, that displays an order summary. At the bottom of the order summary, there are 2 payment method buttons, in cash or using QRIS. If the selected payment method is in cash, the user will be redirected back to the sales data page.

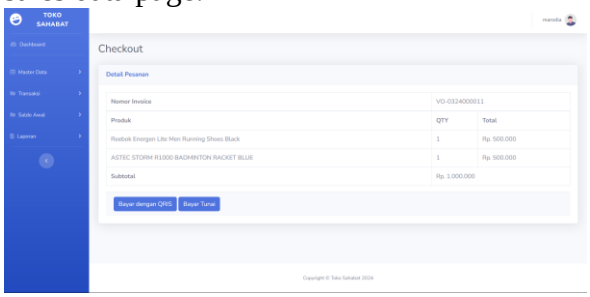

Figure 8. Order Summary

Meanwhile, if the user chooses to pay using QRIS, a payment snap page, as shown in Figure 9, will appear that displays various payment methods that can be used, such as virtual accounts, QRIS, and e-wallets.

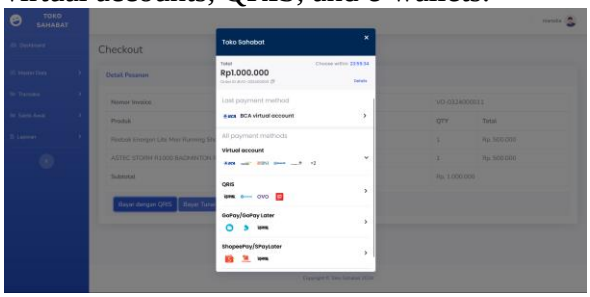

Figure 9. Snap Payment Page

If the buyer has made a payment, a notification will appear that the payment was successful as shown in Figure 10. Then the

system will automatically redirect back to the sales data page.

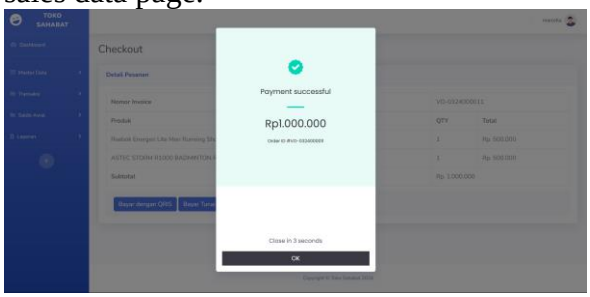

Figure 10. Successful Payment Notification Page

If a buyer wishes to make a return, the user can record it by clicking the return button next to the invoice number. Then, after the return form appears, as shown in Figure 11, users can enter the amount and description.

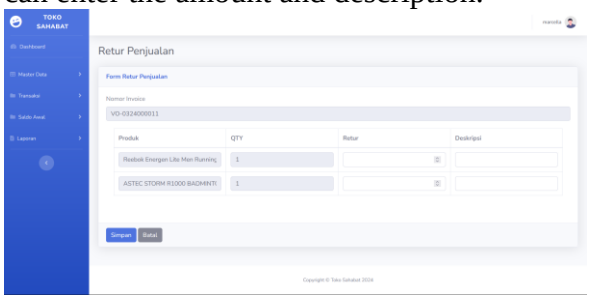

Figure 11. Sales Return Form

In the event of a cash expenditure transaction, the user can navigate to the cash expenditure page, as shown in Figure 12, and click the "Add" button to create a record of the transaction.

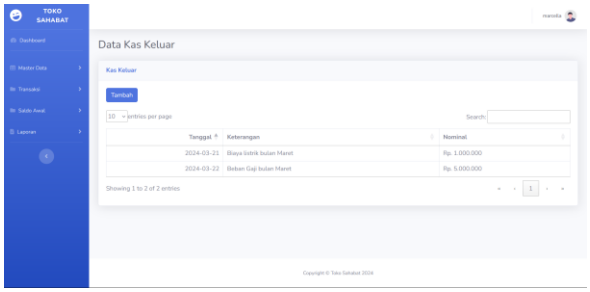

Figure 12. Cash Expenditure Page

After the cash expenditure form appears, users can fill in the transaction date, cost account, and description as shown in Figure 13.

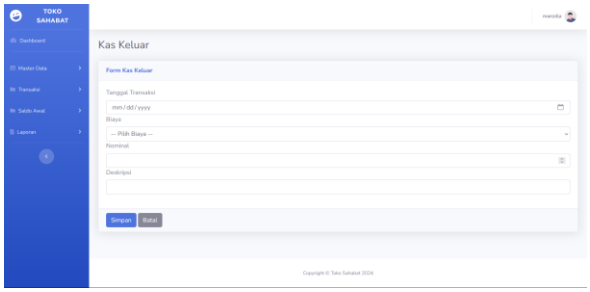

Figure 13. Cash Expenditure Form

If the user wants to view the journal entries that have been created, they can do so on the general ledger page as shown in Figure 14.

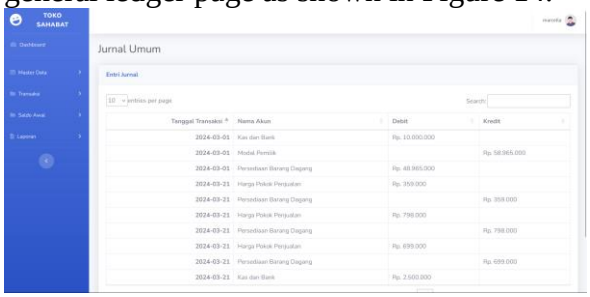

Figure 14. General Ledger Page

Testing

The system was tested through interviews. Interviews were conducted with the owner, who is also a user of the system. Several questions were asked to obtain information about the user's experience in using the system and the suitability of the features contained in the system with their needs. The interview results show that the designed accounting information system is simple to use and extremely useful for managing transactions and cash. Furthermore, the system's features satisfy their requirements.

Table 1. Interviews Result

No.	Question	Answer
1.	Does this system make it easy to record sales and purchase transactions?	Yes, this system is very helpful in recording sales and purchase transactions. The easy-to-use transaction recording feature

		makes the process more efficient.
2.	Is the system responsive and can handle commands well?	Yes, the system is responsive and can handle commands well.
3.	Does this system make it easier to monitor store finances, such as cash flow and debt?	Yes, this system makes it easier to monitor store finances such as tracking cash flow and managing debts more effectively.
4.	Does this system make it easy to track the stock of available items?	Yes, this system makes it easy to track the stock of available items.
5.	Do the financial statements generated by this system help in making business decisions?	Yes, the financial statements generated by this system are very helpful in making business decisions.
6.	Does this system help in recording expense transactions for store operational costs?	Yes, this system is very helpful in recording expense transactions for store operational costs.
7.	Does the feature of managing user access according to their roles and responsibilities facilitate the management of system users?	Yes, the feature of managing user access to suit their roles and responsibilities greatly facilitates the management of system users.
8.	Is the user interface of this system easy to understand and user-friendly?	Yes, the user interface of this system is easy to understand and user-friendly.
9.	Are the features of this system complete enough to meet the needs of the store?	Yes, the features in this system are complete enough to meet the needs of the store.
10.	Does this system meet the accounting needs of the store well?	Yes, this system meets the accounting needs of stores well.

IV. CONCLUSION

This study came to a few conclusions. The accounting information system implemented at Toko Sahabat is a web-based accounting information system that features managing master data, recording financial transactions, managing debts, automatic journal creation, inventory reports, and financial statements. The sales module within the accounting information system is also integrated with Midtrans, enabling customers to make payments using methods other than cash, such as QRIS, Virtual Account, Go-Pay, OVO, etc. The features mentioned above have a positive impact on the operational efficiency of the store because with the system in place, transaction recording, journal creation, and financial reporting can be done quickly. Therefore, this developed accounting information system is suitable for retail businesses.

Future studies should look on implementing an accounting information system in larger-scale retail establishments.

The study could look into how the larger business scale can be used to personalize and improve the system to meet the needs of more complex accounting and financial management requirements.

REFERENCES

[1] A. Kristiyanto, *Pembangunan Olahraga : Untuk Kesejahteraan Rakyat dan Kejayaan Bangsa*. Surakarta: Yuma Pustaka, 2012.

[2] S. Nugroho, *Industri Olahraga*, 1st ed. Yogyakarta: UNY Press, 2020. Accessed: Oct. 22, 2024. [Online]. Available: https://staffnew.uny.ac.id/upload/132319845/penelitian/Buku%20Industri%20Olahraga%202019.pdf

[3] A. Al-Okaily, M. Al-Okaily, F. Shiyyab, and W. Masadah, "Accounting information system effectiveness from an organizational perspective," *Management Science Letters*, pp. 3991–4000, 2020, doi: 10.5267/j.msl.2020.7.010.

[4] H. T. Nguyen and A. H. Nguyen, "Determinants of accounting information systems quality: Empirical evidence from Vietnam," *Accounting*, pp. 185–198, 2020, doi: 10.5267/j.ac.2019.10.004.

[5] A. Paula Monteiro, J. Vale, E. Leite, M. Lis, and J. Kurowska-Pysz, "The impact of information systems and non-financial information on company success," *International Journal of Accounting Information Systems*, vol. 45, p. 100557, Jun. 2022, doi: 10.1016/J.ACCINF.2022.100557.

[6] A. S. Al-Delawi and W. M. Ramo, "The Impact of Accounting Information System on Performance Management," *Polish Journal of Management Studies*, vol. 21, no. 2, pp. 36–48, Jun. 2020, doi: 10.17512/pjms.2020.21.2.03.

[7] G. Edison, F. Manuere, M. Joseph, and K. Gutu, "Evaluation of Factors Influencing Adoption of Accounting Information System by Small to Medium Enterprises in Chinhoyi," *Journal of Contemporary Research in Bussiness*, vol. 4, no. 6, 2012.

[8] P. C. Verhoef *et al.*, "Digital transformation: A multidisciplinary reflection and research agenda," *J Bus Res*, vol. 122, pp. 889–901, Jan. 2021, doi: 10.1016/j.jbusres.2019.09.022.

[9] A. A. Al-Qudah, M. Al-Okaily, G. Alqudah, and A. Ghazlat, "Mobile payment adoption in the time of the COVID-19 pandemic," *Electronic Commerce Research*, Jun. 2022, doi: 10.1007/s10660-022-09577-1.

[10] I. D. D. Nurjannah *et al.*, "The effect of digital marketing, digital finance and digital payment on finance performance of Indonesian SMEs," *International Journal of Data and Network Science*, vol. 6, no. 1, pp. 37–44, 2022, doi: 10.5267/j.ijdns.2021.10.006.

[11] T. M. M. Puspitasari and D. Maulina, "Implementasi Payment Gateway Menggunakan Midtrans Pada Marketplace Travnesia.Com," *Mobile and Forensics*, vol. 1, no. 1, p. 22, Sep. 2019, doi: 10.12928/mf.v1i1.997.

[12] M. D. Arya Syahputra and M. Femy Mulya, "Analisis dan Perancangan E-ticket Metaverse Event Berbasis Midtrans Payment gateway (Studi Kasus: PT Semesta Realitas Indonesia)," *Prosiding TAU SNARS-TEK Seminar Nasional Rekayasa dan Teknologi*, vol. 2, no. 1, pp. 37–49, Jan. 2023, doi: 10.47970/snarstek.v2i1.501.

[13] M. Aditya and D. N. Sulistyowati, "WEB-BASED SPP PAYMENT INFORMATION SYSTEM WITH MIDTRANS PAYMENT GATEWAY," *Jurnal Sistem Informasi*

dan Ilmu Komputer Prima(JUSIKOM PRIMA), vol. 6, no. 2, pp. 23–27, Feb. 2023, doi: 10.34012/jurnalsisteminformasidanilmukomputer.v6i2.2942.

[14] D. C. Ramadhan and M. A. Rosid, "Design of a Web-Based New Student Admission Information System Accompanied by a Midtrans Payment Gateway Payment Method at SMP PGRI 16 Sidoarjo," *Procedia of Engineering and Life Science*, vol. 3, Jan. 2023, doi: 10.21070/pels.v3i0.1322.

[15] A. R. A. P. Ahmad, T. Triase, and M. Alda, "Aplikasi Pemesanan Layanan Laundry pada Noda Laundry dengan Integrasi Midtrans Payment Gateway, Dikembangkan untuk Platform Android," *JTIK (Jurnal Teknik Informatika Kaputama)*, vol. 8, no. 1, pp. 8–14, Jan. 2024, doi: 10.59697/jtik.v8i1.488.

[16] Deni Murdiani and Muhamad Sobirin, "Perbandingan Metodologi Waterfall dan RAD (Rapid Application Development) dalam Pengembangan Sistem Informasi," *Jurnal Informatika Teknologi dan Sains*, vol. 4, no. 4, pp. 302–306, Nov. 2022, doi: 10.51401/jinteks.v4i4.2008.

[17] V. Y. P. Ardhana, M. Sapi'i, H. Hasbullah, and E. A. M. Sampetoding, "Web-Based Library Information System Using Rapid Application Development (RAD) Method at Qamarul Huda University," *The IJICS (International Journal of Informatics and Computer Science)*, vol. 6, no. 1, p. 43, Mar. 2022, doi: 10.30865/ijics.v6i1.4031.