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Development of an Artificial Intelligence-Integrated School Financial Management Application

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ABSTRACT

***Purpose**: This study aims to address persistent inefficiencies in school financial management, particularly in recording accounts payable and receivable, by developing an integrated desktop-based financial management application that supports accuracy, efficiency, and transparency.*

***Subjects and Methods:** The study focuses on school financial administration processes, with school treasurers as the primary users of the system. A desktop-based application was developed using Visual Basic .NET with SQLite as the database, following the Waterfall development model. To enhance usability, the system integrates an Artificial Intelligence (AI) Support feature based on Natural Language Processing (NLP). This feature allows users to input multiple financial transactions simultaneously using natural language commands, which are processed through a Rule-Based algorithm combined with Regular Expressions. System testing was conducted to evaluate functionality, efficiency, security, and output accuracy.*

***Results:** The testing results show that the application significantly accelerates transaction recording, reduces human errors in data entry, and improves data security through encryption mechanisms. The AI-assisted input feature enables more flexible and intuitive interaction, while automated financial report generation ensures consistency and accuracy. These findings demonstrate that integrating AI into school financial systems can effectively streamline administrative workflows.*

***Conclusions:** The study concludes that the proposed system provides a practical and scalable solution for improving school financial management. AI-assisted transaction input reduces workload and operational delays, while the structured database enhances traceability and long-term financial record management.*

INTRODUCTION

Financial management plays a critical role in ensuring the operational sustainability of educational institutions (Azman et al., 2025). Schools are required to maintain effectiveness, transparency, and accountability in every financial activity, as these aspects form the foundation for strategic decision-making and long-term planning (Mulawarman & Haryaka, 2025; Noor & Firdausi, 2024). However, many schools continue to rely on manual bookkeeping through cash ledgers and spreadsheets, which increases the risk of recording errors, delays in reconciliation, and difficulties in tracking historical financial data limitations that have also been highlighted in

prior studies on the inefficiency of manual accounting systems (Permatasari et al., 2024; Bon & Arthana, 2025).

These weaknesses significantly affect cash-flow administration, particularly in the management of accounts payable and receivable. Inaccurate recording of student tuition receivables can distort revenue calculations and hinder the collection process, while improper monitoring of operational payables such as payments to stationery suppliers or catering vendors may disrupt institutional liquidity. Similar challenges have been documented in prior studies investigating receivable and payable management in educational and non-educational sectors (Yusuf et al., 2024; Judijanto et al., 2024; Mais et al., 2025).

Several researchers have attempted to digitize payable and receivable processes. For example, Yusuf et al. (2024) introduced an AI-supported accounting system, though its context did not focus on education. Other works have implemented VB.NET-based applications for receivables in rental services or broader accounting modules (Permatasari et al., 2024), yet these systems did not integrate accounts payable and receivable as core modules nor address the specific financial workflows of schools. Similar studies have also emphasized the need for more comprehensive accounting information systems within educational settings (Amelia et al., 2024; Khairunisa & Suyatmini, 2024).

Meanwhile, the rapid advancement of Artificial Intelligence presents new opportunities for transforming financial workflows, including text-based transaction processing and automation (George et al., 2023; Najem et al., 2025). Multiple studies show that AI and machine-learning-driven systems can enhance operational efficiency, accelerate transaction recording, and reduce manual errors (Sofianti, 2025; Safitri et al., 2024; Kurniawan, 2025; Ivana & Soeherman, 2024). Deep learning models have also demonstrated strong predictive capabilities in financial time series (Sezer et al., 2020) and receivable forecasting (Appel et al., 2020). Innovations such as machine-learning-enhanced triple-entry accounting further indicate a shift toward greater transparency through advanced analytics (Weinberg & Faccia, 2024).

Despite these developments, AI-supported automation for school-based financial recording particularly for accounts payable and tuition receivable modules remains underexplored (Judijanto et al., 2024; Amelia et al., 2024). This gap indicates the need for a system that not only digitizes financial workflows but also integrates natural-language-based transaction input to minimize administrative workload and improve data accuracy.

Responding to this gap, the present study designs and develops a desktop-based school financial management system using VB.NET and SQLite, integrating a Natural Language Processing (NLP) feature capable of processing multi-transaction inputs through text commands using rule-based algorithms and regular expressions. The system aims to strengthen internal control, enhance data accuracy, and streamline cash-flow management for school treasurers in a structured and accountable manner.

LITERATURE REVIEW

Bhawna & Gupta (2025) said that, artificial intelligence has increasingly reshaped the landscape of accounting and financial information systems, accelerating automation, enhancing accuracy, and expanding analytical capabilities. Recent studies highlight that AI integration in accounting practices brings substantial operational efficiency but also introduces ethical and governance concerns that must be addressed (Sofianti, 2025; Kurniawan, 2025). The literature consistently emphasizes AI's transformative potential across accounting domains, including data processing, reporting automation, auditing, forecasting, and decision support (Amelia et al., 2024; Mais et al., 2025).

AI in Accounting Practice and Education

Current research indicates that AI-driven tools are being increasingly adopted not only in professional accounting practices, but also in accounting education, such as through AI-powered chatbots for instructional support (Khairunisa & Suyatmini, 2024) and generative AI applications that impact academic integrity and competency development (Ivana & Soeherman, 2024). Studies also describe both opportunities and risks such as increased automation capacity versus

the threat of skill displacement faced by accountants in the AI era (Bon & Arthana, 2022; Mais et al., 2025).

AI for Accounting Information Systems (AIS)

Within AIS research, several studies focus on developing accounting or financial management systems using conventional methods or rule-based automation. Systems built on desktop frameworks, including VB.NET and SQLite, remain prevalent due to their simplicity and reliability (Permatasari et al., 2024). However, most existing systems still rely heavily on manual interaction and do not incorporate natural-language-based automation or LLM-driven transaction processing (Yusuf et al., 2024; Safitri et al., 2024).

AI for Automation, Forecasting, and Financial Intelligence

Advanced AI applications in accounting have been widely reported, including the use of machine learning for forecasting financial time series (Sezer et al., 2020), predicting accounts receivable collection outcomes (Appel et al., 2020), and enhancing transparency through triple-entry accounting supported by AI analytics (Weinberg & Faccia, 2024). These studies illustrate the growing movement toward intelligent automation though focused largely on prediction and analysis rather than operational transaction input.

AI, NLP, and LLM-Based Transaction Processing

Natural-language processing techniques, historically rule-based or regex-based, have been used to structure textual financial information (Mishra et al., 2025). However, recent literature reveals a shift toward large language models (LLMs) that allow more flexible understanding of user intent and contextual financial statements (Judijanto et al., 2024). To date, there is limited research on using LLMs for multi-transaction financial input in school financial management or small-scale accounting systems representing a clear gap that this study addresses.

Software Development Models in AIS Research

The Waterfall model remains a commonly adopted framework in accounting system development because of its structured, sequential nature and suitability for systems with clearly defined requirements (Permatasari et al., 2024; Judijanto et al., 2024). R&D approaches similarly dominate educational and institutional system development due to their iterative evaluation and refinement characteristics (Safitri et al., 2024).

Research Gap

Across the existing literature, three clear gaps emerge: (1) Most accounting systems remain form-based, lacking natural-language multi-transaction input mechanisms; (2) AI integration is disproportionately focused on forecasting and analytics, not operational automation of routine accounting inputs; (3) School financial systems particularly have little to no adoption of LLM-driven data entry, despite schools' heavy reliance on repetitive transactions such as tuition collection and expense management. This study responds directly to those gaps by developing a desktop AIS that integrates LLM-based natural-language multi-transaction processing to enhance speed, usability, and accuracy.

METHODOLOGY

The study employed a Research and Development (R&D) approach using the Waterfall software development model, a sequential and systematic method widely implemented in accounting information system research and financial system development (Permatasari et al., 2024; Judijanto et al., 2024). The model was selected because it supports structured planning and documentation, which aligns with the needs of financial applications requiring high accuracy and traceability (Safitri et al., 2024).

Requirements Analysis

This phase aimed to identify the functional and non-functional requirements of the school financial management system. Data collection was performed through in-depth interviews with the school treasurer and a literature review on accounting information systems, AI applications

in accounting, and financial automation methods (Yusuf et al., 2024; Amelia et al., 2024; Mais et al., 2025). The analysis produced several key functional requirements, including secure authentication, role-based access control, and core modules for payables, receivables, cash inflows, and cash outflows. The role design (Admin, Treasurer, Principal) follows best practices in internal control and segregation of duties commonly recommended in AI-augmented accounting systems (Kurniawan, 2025; Sofianti, 2025). Non-functional requirements prioritized system reliability, data security, and usability concerns that are consistently emphasized in recent AI-integrated accounting studies (Ivana & Soeherman, 2024).

System Design

The system design was developed using Unified Modeling Language (UML), a standard modeling approach in modern AIS development (Permatasari et al., 2024). The Use Case Diagram illustrates the interactions between the three system actors Admin, Treasurer, and Principal along with their respective functional access.

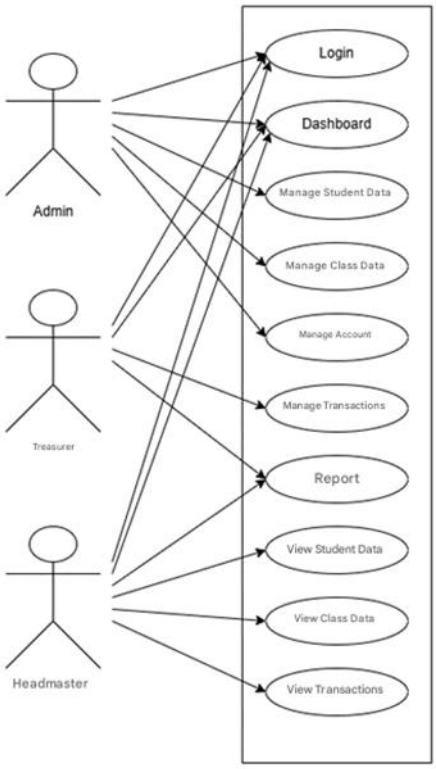

Figure 1. Use Case Diagram

Figure 1 presents the Use Case Diagram of the proposed financial management system, which illustrates the interactions between system users and the main system functionalities. The system involves three primary actors, namely the Admin, Treasurer, and Principal (Headmaster), each with different access rights according to their roles and responsibilities. The admin has comprehensive access, including logging into the system, viewing the dashboard, and managing student data, class data, user accounts, and financial transactions, as well as generating reports (Dawson et al., 2010; Bodily & Verbert, 2017). The Treasurer focuses on financial operations, particularly managing transactions and accessing reports to support daily financial administration. Meanwhile, the Principal has a supervisory role, with access limited to viewing student data, class data, and transaction reports to support monitoring and decision-making (Breiter & Light, 2006). Overall, this use case diagram demonstrates a clear separation of duties and role-based access control, which is essential to ensure data security, accountability, and effective financial governance within the school financial management system. Database design followed a relational structure adapted to support role-based authorization and financial

modularization. The database schema accommodates user accounts, student and class master data, payables, receivables, and cash inflows/outflows.

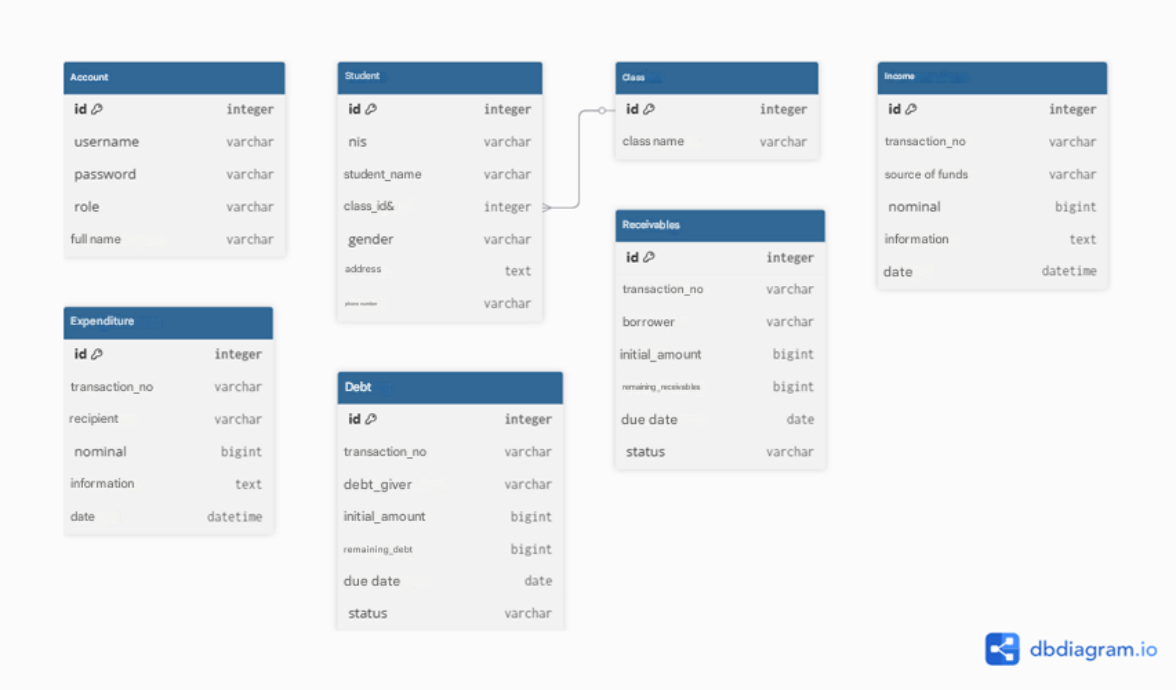

Figure 2. Database Table Structure

Figure 2 illustrates the database table structure used in the proposed school financial management system. The database is designed to support data integrity, traceability, and efficient transaction processing by organizing information into several interrelated tables. The Account table stores user authentication and role information to support secure, role-based system access. The student table records student identity data and is linked to the Class table through a foreign key, enabling structured management of class membership. Financial transactions are separated into Income and Expenditure tables to clearly distinguish incoming and outgoing funds, each storing transaction numbers, monetary values, descriptions, and timestamps. To manage financial obligations, the system includes Receivables and Payables tables, which record receivables and payables along with transaction references, outstanding balances, due dates, and status indicators. This relational database design ensures consistency across financial records, supports accurate reporting, and facilitates long-term monitoring of school financial activities.

Implementation

The application was implemented using Visual Basic .NET and SQLite, both commonly utilized for desktop-based accounting system development due to their simplicity and stability (Judijanto et al., 2024). AI integration was implemented using a Large Language Model (LLM) to interpret natural-language financial commands, aligning with the recent shift from rule-based NLP tools toward generative AI for accounting automation (Safitri et al., 2024; Mais et al., 2025). Unlike traditional regex- or rule-based NLP which earlier studies found rigid and prone to contextual misinterpretation LLM-based processing offers flexible understanding of transaction categories, monetary values, and contextual cues (Sezer et al., 2020; Appel et al., 2020).

System Testing

Functional testing was conducted using the Black Box method to validate system features, especially access control and financial transaction integrity (Masliah et al., 2025; Kinasih et al., 2025). The testing procedure follows established software evaluation practices in financial informatics research (Bon & Arthana, 2022). All major CRUD operations, role restrictions, AI-based multi-transaction inputs, and reporting features were tested and evaluated (Table 1).

RESULTS AND DISCUSSION

The developed application successfully implements a role-based financial management system tailored to school operations, integrating AI-driven multi-transaction processing to enhance data entry efficiency. This section presents the system's key outputs and discusses their implications in relation to prior studies.

Authentication and Role Identification

The login interface provides secure authentication through credential validation and role detection.

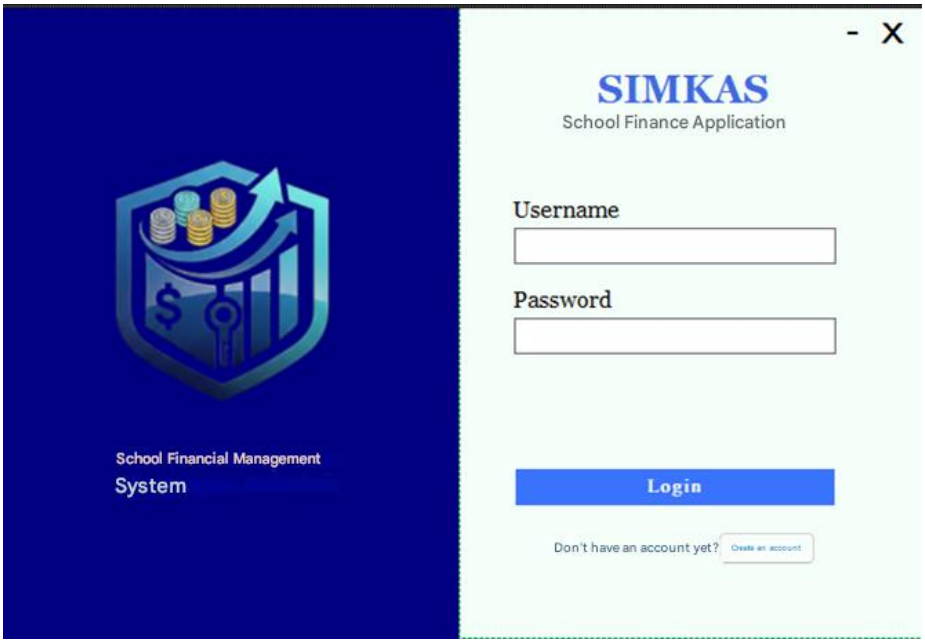

Figure 3. Login Form

After successful authentication, the system automatically configures the interface according to the assigned role (Admin, Treasurer, or Principal). This dynamic UI personalization aligns with prior AIS studies emphasizing secure access control and structured authorization (Permatasari et al., 2024; Judijanto et al., 2024). The system also includes a secure registration module for account creation.

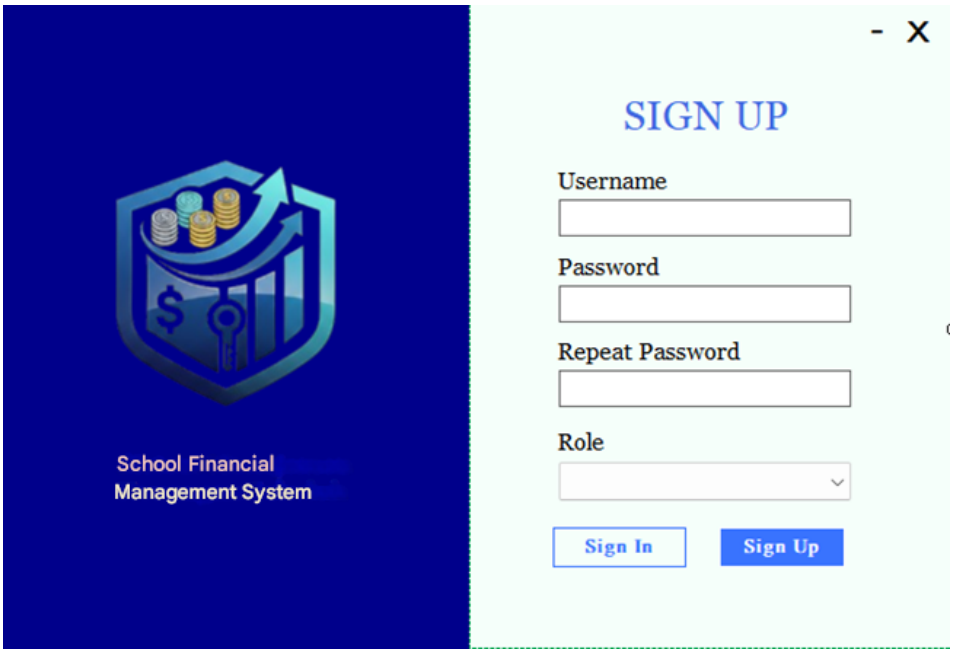

Figure 4. Sign-Up Form

Role-Based Access Control Output

Role segmentation is applied consistently across the application to ensure that each actor interacts only with the functions aligned to their operational responsibilities. The administrator holds full authority over master data management, including the creation, modification, and deletion of student and class records, while being intentionally restricted from accessing any financial modules to prevent conflicts of responsibility. In contrast, the treasurer is granted complete operational access to financial functionalities covering payables, receivables, cash flow processing, and automated reporting yet is restricted from altering master data to preserve structural data integrity. The principal is assigned a supervisory role with read-only access to all modules, where every action button is disabled to maintain a clear separation between monitoring and operational involvement. This segregation of roles aligns with recommendations in prior literature emphasizing the protection of sensitive financial information through differentiated permission structures (Safitri et al., 2024; Amelia et al., 2024).

Receivable Management Module Output

The Receivable (Piutang) interface enables the treasurer to record partial and full tuition payments and automatically update the corresponding cash inflow. This automation supports operational accuracy, consistent with findings on AI-assisted accounting efficiency (Sofianti, 2025).

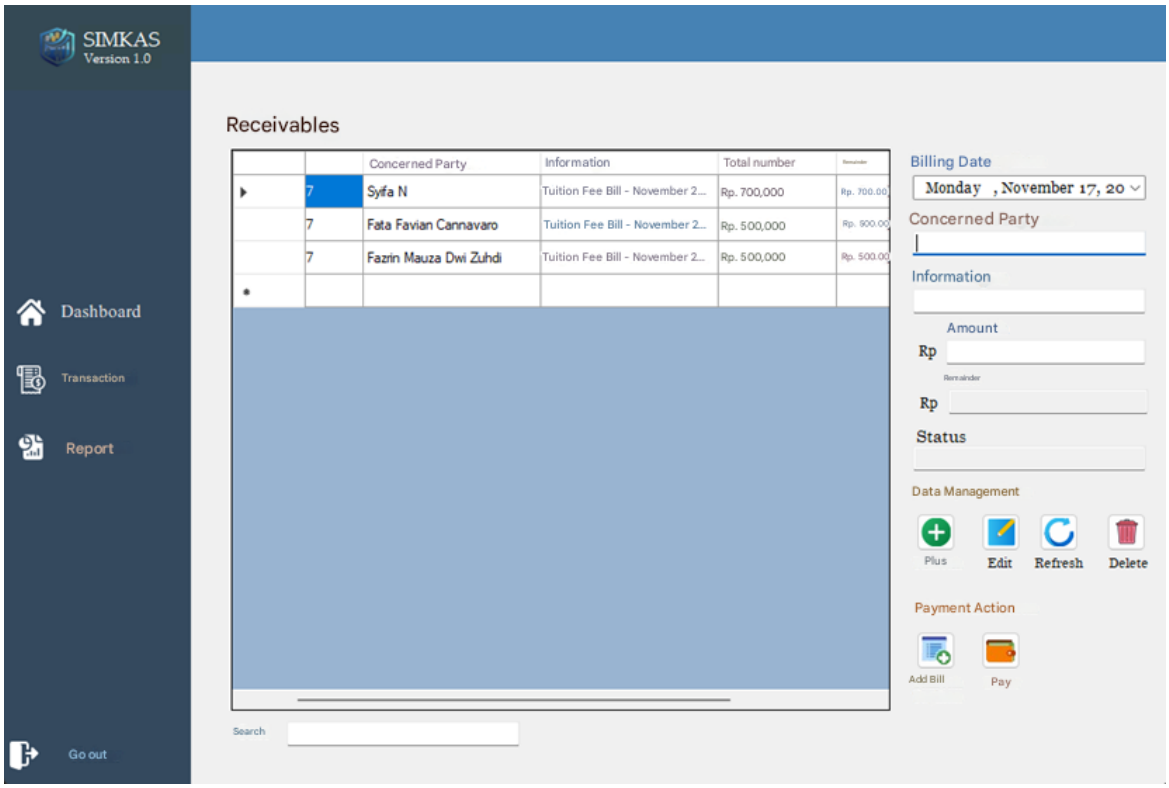

Figure 5. Receivable Management Interface

Payable Management Module Output

The Payable (Utang) module allows the treasurer to record supplier obligations, update payment status, and integrate all transactions into the cash-out journal.

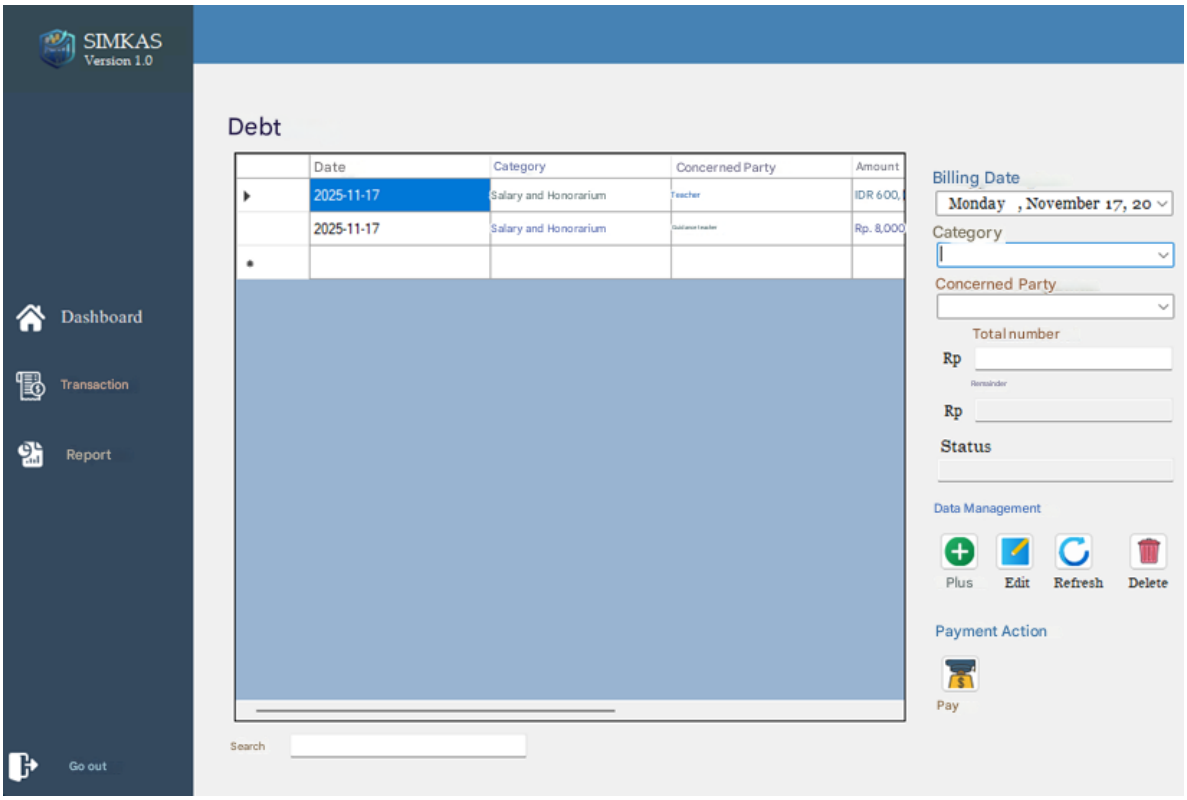

Figure 6. Payable Management interface

AI-Based Multi-Transaction Processing Output

A key contribution of this study is the integration of AI through natural-language prompt processing, enabling the treasurer to input multiple transactions both cash inflows and outflows simultaneously. Commands such as *"Record SPP income of 500,000 for students in Class 8A and add electricity expense for January of 1,200,000"* are parsed and converted into structured database entries. This capability directly addresses research gaps identified in recent literature, where most AIS still rely on manual or rule-based data entry mechanisms (Yusuf et al., 2024; Safitri et al., 2024).

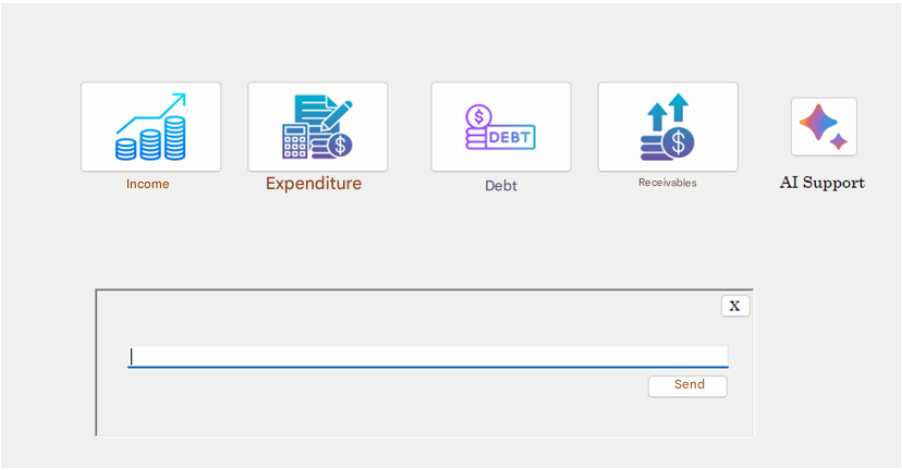

Figure 7. AI Transaction Prompt Interface

Compared to traditional NLP approaches relying on rule-based or regex parsing (Judijanto et al., 2024), the LLM-assisted method demonstrates significantly greater flexibility and contextual interpretation, consistent with advancements highlighted in contemporary AI-accounting studies (Weinberg & Faccia, 2024; Mais et al., 2025).

System Testing Output

Black-box testing confirms that all modules login, master data, transactions, AI multi-input, reporting, and logout perform as intended. Each test scenario yielded valid outcomes, indicating functional reliability. These findings reinforce prior research stating that structured development models such as Waterfall are effective for systems with stable requirements and role-based functionality (Permatasari et al., 2024; Judijanto et al., 2024).

Table 1. Black Box Testing Results

Feature Tested	Test Scenario	Expected Result	Actual Result	Conclusion
Login	Entering a valid email and password	The system successfully logs in and displays the Dashboard page	The system successfully logs in and displays the Dashboard page	Valid
Login	Entering an invalid email or password	The system fails to log in and displays a "Wrong password" notification	The system fails to log in and displays a "Wrong password" notification	Valid
Class Data	Adding new class data	The class name appears in the table	The class name appears in the table	Valid
Student Data	Adding new student data	The student name appears in the table	The student name appears in the table	Valid
Transactions	Processing a receivable payment (SPP) equal to half of the total amount	The data are stored in the income table as half of the total amount	The data are stored in the income table as half of the total amount	Valid
Multi-Transaction	Submitting income and expense prompts simultaneously	The data are stored in both the income and expense tables	The data are stored in both the income and expense tables	Valid
Report Generation	Generating a report in PDF format	The PDF file is saved on the device	The PDF file is saved on the device	Valid
Logout	Clicking the logout button on the sidebar	The system logs out and displays the Login page	The system logs out and displays the Login page	Valid

The black box testing results indicate that all core functional modules of the system operated as intended and complied with the predefined functional requirements. Authentication testing confirmed that the login mechanism accurately differentiated between valid and invalid credentials, granting access only to authorized users while providing appropriate error feedback for incorrect inputs. Master data management functions, including class and student data entry, were successfully executed, demonstrating reliable Create and Read operations without data inconsistency. Transaction testing further showed that partial tuition fee payments were correctly recorded and reflected proportionally in the cash-in records, indicating accurate handling of receivable calculations.

The AI-assisted multi-transaction feature functioned effectively by processing simultaneous income and expense prompts and storing the results correctly in their respective tables. This confirms the system's ability to streamline transaction input without compromising data integrity. Additionally, the report generation module successfully produced PDF-based financial reports, ensuring data portability and archival capability. Finally, the logout functionality operated correctly by securely terminating user sessions and redirecting users to the login interface. Overall, the consistency

between expected and actual outcomes across all test scenarios validates the functional reliability, access control enforcement, and operational stability of the developed system.

CONCLUSION

This study implemented a desktop-based school financial management system that integrates core accounting functions payables, tuition receivables, cash-flow processing, and automated reporting using VB.NET and SQLite as a lightweight yet reliable technological stack. The system directly addresses persistent weaknesses of manual bookkeeping practices, particularly the risks of inaccurate entries, delayed reconciliation, and fragmented audit trails, issues also highlighted across AI-augmented accounting research (Amelia et al., 2024; Bon & Arthana, 2022). The incorporation of an NLP-driven AI Support feature marks the system's primary contribution, enabling multi-transaction processing through natural-language commands modeled after emerging AI-integration strategies discussed in educational and operational accounting environments (Sofianti, 2025; Mais et al., 2025). Furthermore, the system's role-based access model strengthens internal control by differentiating operational, administrative, and supervisory permissions, aligning with prior arguments emphasizing the necessity of safeguarding sensitive financial data through structured authorization frameworks (Safitri et al., 2024; Amelia et al., 2024). Test results demonstrate improvements in data-entry speed, accuracy, internal consistency, and traceability, reinforcing the literature consensus that AI-assisted workflows can enhance efficiency when embedded into accounting systems (Yusuf et al., 2024; Judijanto et al., 2024). Despite these outcomes, the system remains limited by its desktop-only deployment and the use of rule-based NLP, which restricts linguistic flexibility and contextual understanding compared to more advanced machine-learning approaches widely discussed in AI financial forecasting and predictive analytics research (Sezer et al., 2020; Appel et al., 2020). Future work should expand the system toward multi-platform accessibility, incorporate adaptive learning models, and integrate predictive analytics to support more strategic financial decision-making within school operational contexts.

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CONFLICT OF INTEREST

There was no conflict of interest in this study.

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REFERENCES

Amelia, I., Azzahra, Y. N., Abda, A., & Azmi, Z. (2024). Pemanfaatan Artificial Intelligence Dalam Akuntansi: Kajian Literatur Review. *Akuntansi*, *3*(1), 129-140. https://doi.org/10.55606/akuntansi.v3i1.1472

Appel, A. P., Malfatti, G. L., Cunha, R. L. D. F., Lima, B., & de Paula, R. (2020). Predicting account receivables with machine learning. *arXiv preprint arXiv:2008.07363*. https://doi.org/10.48550/arXiv.2008.07363

Azman, N. S., Abu Hassim, A., & Shamsudin, M. F. (2025). Financial Management Strategies and Challenges in Malaysian Educational Institutions: A Systematic Review of Educational Technology Integration. *Journal Of Research, Policy & Practice of Teachers & Teacher Education (JRPPTTE)*, *15*(1). https://doi.org/10.37134/jrpptte.vol15.1.6.2025

Bhawna, & Gupta, P. (2025). Empowering Financial Efficiency in India: Harnessing Artificial Intelligence (AI) for Streamlining Accounting and Finance. *Generative Artificial*

Intelligence in Finance: Large Language Models, Interfaces, and Industry Use Cases to Transform Accounting and Finance Processes, 407-428. https://doi.org/10.1002/9781394271078.ch20

Bodily, R., & Verbert, K. (2017). Review of research on student-facing learning analytics dashboards and educational recommender systems. *IEEE Transactions on Learning Technologies*, *10*(4), 405-418. https://doi.org/10.1109/TLT.2017.2740172

Bon, S. F., & Arthana, I. K. (2025). Transformasi Profesi Akuntan di Era Artificial Intelligence (AI): Systematic Literature Review. *Juara: Jurnal Riset Akuntansi*, *15*(1), 21-32. https://doi.org/10.36733/juara.v15i1.11030

Breiter, A., & Light, D. (2006). Data for school improvement: Factors for designing effective information systems to support decision-making in schools. *Journal of Educational Technology & Society*, *9*(3), 206-217.

Dawson, S., Heathcote, L., & Poole, G. (2010). Harnessing ICT potential: The adoption and analysis of ICT systems for enhancing the student learning experience. *International Journal of Educational Management*, *24*(2), 116-128. https://doi.org/10.1108/09513541011020936

George, A. S., George, A. H., Baskar, T., & Sujatha, V. (2023). The rise of hyperautomation: a new frontier for business process automation. *Partners Universal International Research Journal*, *2*(4), 13-35. https://doi.org/10.5281/zenodo.10403036

Ivana, I., & Soeherman, B. (2024). Ancaman Darurat Text Generative Artificial Intelligence pada Pendidikan Akuntansi. *Jurnal Riset Akuntansi dan Keuangan*, *12*(1), 667-682.

Judijanto, L., Al-Amin, A. A., & Nurhakim, L. (2024). Implementasi Teknologi Artificial Intelligence dan Machine Learning dalam Praktik Akuntansi dan Audit: Sebuah Revolusi atau Evolusi. *COSMOS: Jurnal Ilmu Pendidikan, Ekonomi dan Teknologi*, *1*(6), 470-483.

Khairunisa, T., & Suyatmini, S. (2024). Implementation of AI Chatbot as an Interactive Learning Medium on Accounting Lessons in SMK. *Ideguru: Jurnal Karya Ilmiah Guru*, *9*(3), 1414-1420. https://doi.org/10.51169/ideguru.v9i3.1059

Kinasih, S. A., Sahputra, R., & Anwar, C. (2025). Functional Suitability Testing of Web-Based Warehouse Inventory Application Using Black Box Testing. *Ambidextrous Journal of Innovation Efficiency and Technology in Organization*, *3*(02), 138-154. https://doi.org/10.61536/ambidextrous.v3i02.391

Kurniawan, A. (2025). Saat Artificial Intelligence (AI) Bertemu Akuntansi Syariah: Inovasi Cerdas atau Dilema Etis?. *Balance: Jurnal Akuntansi dan Bisnis*, *10*(2), 267-290. https://doi.org/10.32502/balance.v10i2.1208

Mais, R. G., Wulaningsih, R. W., Oktasari, E., Setiawan, D. A., & Wulandari, W. (2025). Artificial Intelligence (AI) dalam Akuntansi: Peluang dan Tantangan untuk Profesi Akuntan. *Jesya (Jurnal Ekonomi dan Ekonomi Syariah)*, *8*(1), 751-765. https://doi.org/10.36778/jesya.v8i1.1976

Masliah, N. E., Zahrani, R. V., Wahyuningtyas, K. D., Dianata, T. P. L., Suhendar, M. A., Arrafi, M. N., & Atmaja, S. A. (2025). Functional Testing of The Dana E-Wallet Transaction Features Using Black Box Testing. *Jurnal Info Sains: Informatika dan Sains*, *15*(01), 109-116.

Mishra, K., Pagare, H., & Sharma, K. (2025). A hybrid rule-based NLP and machine learning approach for PII detection and anonymization in financial documents. *Scientific Reports*, *15*(1), 22729.

Mulawarman, W. G., & Haryaka, U. (2025). Smart Budgeting for Future-Ready Schools: Strategies for Efficiency and Financial Accountability in Education Funding. *Journal of*

Pedagogy and Education Science, *4*(02), 259-273. https://doi.org/10.56741/IISTR.jpes.00964

Najem, R., Bahnasse, A., Fakhouri Amr, M., & Talea, M. (2025). Advanced AI and big data techniques in E-finance: a comprehensive survey. *Discover Artificial Intelligence*, *5*(1), 102. https://doi.org/10.1007/s44163-025-00365-y

Noor, F., & Firdausi, I. (2024). Strategic Financial Planning for Long-Term Sustainability in Madrasah Aliyah. *Nazhruna: Jurnal Pendidikan Islam*, *7*(3), 493-511. https://doi.org/10.31538/nzh.v7i3.1

Permatasari, C. L., Luhsasi, D. I., & Salsabila, S. (2024). Development of Education Accounting Information System. *Jati: Jurnal Akuntansi Terapan Indonesia Учредители: Universitas Muhammadiyah Yogyakarta*, *7*(2), 113-132. https://doi.org/10.18196/jati.v7i2.22047

Safitri, D., Sania, R. R., & Wahyudi, M. (2024). Implementasi akuntansi manajemen berbasis Artificial Intelligence dalam pengendalian biaya. *Jurnal Manajemen dan Penelitian Akuntansi (JUMPA)*, *16*(2), 182-187. https://doi.org/10.58431/jumpa.v16i2.268

Sezer, O. B., Gudelek, M. U., & Ozbayoglu, A. M. (2020). Financial time series forecasting with deep learning: A systematic literature review: 2005–2019. *Applied soft computing*, *90*, 106181. https://doi.org/10.1016/j.asoc.2020.106181

Sofianti, S. P. D. (2025). AI Integration in Accounting: Operational Efficiency Implications and Ethical Challenges for Professional Accountants. *Oikonomia: Journal of Management Economics and Accounting*, *2*(3), 73-88. https://doi.org/10.61942/oikonomia.v2i3.357

Weinberg, A. I., & Faccia, A. (2024). Transforming Triple-Entry Accounting with Machine Learning: A Path to Enhanced Transparency Through Analytics. *arXiv preprint arXiv:2411.15190*. https://doi.org/10.48550/arXiv.2411.15190

Yusuf, M. F. M., Garusu, I. A., & Rauf, D. M. (2024). Sistem Penerapan Artificial Intelligence Dalam Akuntansi: Indonesia. *Jurnal Ilmu Sosial Dan Pendidikan*, *2*(2), 01-07.