



RESEARCH ARTICLE

Sales and Collection - MS Access Application: A Comprehensive Reporting and Data Management Solution

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Abstract

This study presents the development of a Sales and Collection System designed on the Microsoft Access platform to enhance financial management efficiency in small and medium-sized enterprises (SMEs). The system integrates relational database principles, SQL-based query processing, and Visual Basic for Applications (VBA) automation to streamline sales transactions, payment tracking, and reporting. Its architecture combines modular design, normalized data structures, and a user-oriented interface that simplifies data handling and supports real-time financial monitoring. Interactive drill-down reports transform static records into analytical insights, enabling managers to evaluate performance and prioritize collection activities effectively. The system demonstrates substantial improvements in workflow efficiency, data accuracy, and decision-making by reducing manual input, minimizing errors, and consolidating financial operations within a single environment. Despite inherent limitations in scalability, platform dependency, and cloud integration, the solution remains a practical and cost-effective option for SMEs with moderate data volumes. Future enhancements may include integration with accounting and e-commerce platforms, web-based accessibility, and mobile extensions to improve flexibility and responsiveness. Overall, the project illustrates how Microsoft Access can serve as a viable foundation for data-driven business management when supported by sound design, structured development practices, and user-centered implementation.

Keywords

Microsoft Access; Sales Management; Accounts Receivable; SME Digitization; Database Application.

1 | INTRODUCTION

Sales and collection management remains central to sustaining financial stability and operational continuity, particularly for small and medium-sized enterprises (SMEs) that operate with constrained resources. Effective control of sales transactions, invoicing, payment tracking, and accounts receivable enables firms to maintain cash flow, support customer relationships, and make timely managerial decisions on financial performance (Gupta & Batra, 2016; Kaur *et al.*, 2021). In emerging economies such as India, where SMEs dominate the business landscape, limited technological capacity and dependence on manual systems often hinder efficiency in financial data handling (Msomi & Kandolo, 2023).

Studies reveal that many SMEs rely on spreadsheets or paper-based tools for accounting and collection activities, which increases the likelihood of data inconsistencies and financial inaccuracies (Kaur *et al.*, 2021). Against this backdrop, accessible database solutions such as Microsoft Access offer a viable pathway toward digital transformation by providing an affordable, user-friendly platform for managing structured financial data and generating accurate reports (Hidayat *et al.*, 2024; Andriani *et al.*, 2023; Farida & Desinaini, 2021). Microsoft Access enables SMEs to develop tailored applications for sales and collection processes through relational database structures, SQL-based queries, and form-driven interfaces that enhance usability and reduce the learning curve compared with complex enterprise systems. The software's compatibility with other Microsoft Office applications also accelerates adoption, as users can easily integrate sales data with Excel or Word for documentation and analysis (Hidayat *et al.*, 2024). When combined with Visual Basic for Applications (VBA), Access supports automation and custom logic that improve workflow efficiency and error control (Dharmawan, 2025). Its adaptability allows small businesses to adjust their systems as operational demands evolve, promoting scalability and responsive data management without high implementation costs. This flexibility has proven beneficial for SMEs that lack the infrastructure to invest in full-scale ERP systems yet seek to improve accuracy and transparency in financial reporting (Gill *et al.*, 2022).

The growing role of financial technology also strengthens the argument for digitalized sales and collection management. Initiatives such as India's Unified Payments Interface (UPI) have enhanced SMEs' access to financial services and reduced transaction delays (Shamim & Ahmad, 2025). Moreover, research links financial literacy with long-term business sustainability, showing that entrepreneurs who understand cash flow and collection dynamics are better equipped to navigate market fluctuations (Msomi & Kandolo, 2023). In this environment, efficient data management tools not only improve daily operations but also support informed decision-making by providing real-time insights into business performance. As reporting capabilities evolve, organizations increasingly demand interactive systems that transform raw data into visual and analytical insights, allowing managers to move from summaries to detailed transaction-level information (Rabiei *et al.*, 2024; Ahn *et al.*, 2021). The Sales and Collection application developed in Microsoft Access aligns with these expectations by incorporating drill-down reporting, visual dashboards, and export functions that enhance analytical depth and information accessibility (Praharaj *et al.*, 2022; Stahlman *et al.*, 2025; Zaçaj *et al.*, 2022; Nasrallah *et al.*, 2024). Dashboards provide intuitive representations of financial indicators, enabling quick assessments of customer payments, overdue balances, and sales trends (Barus *et al.*, 2024). By facilitating interactive navigation and visualization, such systems foster data-driven decision-making and operational responsiveness, attributes increasingly vital for SMEs facing dynamic market pressures (Sin *et al.*, 2023). Within this framework, the present project demonstrates how a Microsoft Access-based solution can integrate sales and collection workflows, enhance reporting precision, and strengthen overall business intelligence for SMEs seeking practical digital tools for financial management.

2 | SYSTEM ARCHITECTURE

Microsoft Access functions as a robust database management system (DBMS) well-suited for small and medium-sized enterprises (SMEs) seeking an affordable and accessible platform to manage sales and collection activities. Its architecture integrates several essential components that enhance both data integrity and application flexibility. The Jet/ACE database engine provides the foundation for relational data storage, transaction management, and SQL-based query processing—core elements that ensure accurate and efficient data handling (Sarhan *et al.*, 2018). Within Access, tables are structured using fields that define specific data types, while records store the actual information. This arrangement supports systematic data organization, allowing users to maintain detailed records of customers, transactions, and payments. By establishing relationships among tables, Access promotes relational integrity and enables users to analyze dependent data effectively throughout the sales and collection cycle (Farida & Desinaini, 2021). Queries in Access serve as a powerful mechanism for data manipulation and reporting. Users can retrieve, update, or aggregate data using SQL statements, apply filters, and create calculated fields to generate analytical insights. These capabilities allow SMEs to monitor key performance indicators such as revenue, outstanding balances, and payment timeliness (Farida & Desinaini, 2021; Andriani *et al.*, 2023). To enhance user interaction, Access provides built-in form and report designers that enable the creation of customized interfaces. Forms facilitate data entry through visual components such as text boxes, combo lists, and buttons, while reports translate data into clear, formatted outputs suitable for management reviews or financial reporting. This functionality reduces dependency on manual data entry and repetitive spreadsheet processing, which are common sources of inaccuracy in small business operations (Andriani *et al.*, 2023).

The integration of Visual Basic for Applications (VBA) extends Access beyond basic database operations by enabling event-driven automation and customized logic. Through VBA, developers can automate complex calculations, validate input data, or trigger actions based on user interaction. While macros can perform simple automated routines, VBA offers more comprehensive control and flexibility, allowing the system to adapt to business-specific workflows and policies

(Farida & Desinaini, 2021). This integration makes Access particularly valuable for SMEs that require efficient automation without the need for external software or costly development resources. Overall, Microsoft Access combines structured data management, user-oriented design tools, and programmable automation to deliver a scalable solution for sales and collection management. Its versatility allows organizations to streamline workflows, maintain data consistency, and enhance analytical capabilities—making it a practical platform for improving operational performance and supporting growth (Farida & Desinaini, 2021; Andriani *et al.*, 2023). The database design of the Sales and Collection application follows a normalized relational model to maintain data integrity and avoid redundancy. Key entities include the Customers table, which stores client information such as identification numbers, names, contact details, addresses, credit limits, payment terms, and account status.

The SalesTransactions table records order and invoice details, including transaction identifiers, customer references, dates, totals, and due dates. Complementing these are the SalesTransactionDetails table, which lists individual line items such as products, quantities, and pricing, and the Payments table, which tracks payments received, methods used, and references for each transaction. The PaymentApplications table connects payments with corresponding invoices, supporting partial and multiple applications. Additional tables such as Products, Employees, PaymentTerms, CustomerTypes, and SystemSettings ensure that the system maintains standardized configurations and organized master data. This design enforces business rules through validation, primary and foreign key constraints, and indexing for performance optimization, ensuring that all relationships between data elements remain consistent and reliable. Architecturally, the application adopts a modular structure to enhance maintainability and scalability. The Main Dashboard acts as a central navigation hub, presenting key performance indicators (KPIs), alerts, and quick links to the primary modules. The Customer Management Module handles client registration, updates, account summaries, and statement generation. The Sales Transaction Module manages order processing, invoice creation, and transaction tracking, while the Payment Processing Module oversees payment entry, allocation, and receipt generation. The Accounts Receivable Module focuses on monitoring outstanding balances through aging reports, credit control, and collection activities. The Reporting Module consolidates analytical tools such as sales and collection summaries, interactive drill-down reports, and export functions to Excel or PDF formats.

Finally, the Administration Module manages user access, employee records, product information, and backup routines. This modular arrangement ensures a clear separation of functions, allowing updates and testing to be conducted independently while preserving the system's overall integrity. The user interface of the application is designed with usability and consistency as guiding principles. Each form maintains a uniform structure, with predictable navigation patterns, standardized color schemes, and clearly labeled fields. Simplicity is emphasized through uncluttered layouts that prioritize essential information and minimize unnecessary input steps. Efficiency is achieved through keyboard shortcuts, auto-fill options, and quick filtering features, allowing users to complete tasks with minimal effort. The interface provides immediate feedback through validation prompts, confirmation messages, and progress indicators, helping prevent errors and reinforcing user confidence. Accessibility is addressed through readable typography, appropriate contrast levels, logical tab sequences, and informative tooltips that support diverse user needs. By combining clarity, responsiveness, and visual consistency, the design ensures that users can manage data accurately while maintaining compliance with underlying business rules. In summary, the system architecture of the Sales and Collection application integrates structured database design, modular functionality, and user-centered interface development within the Microsoft Access environment. Together, these components form a cohesive platform that supports SMEs in managing financial transactions efficiently, maintaining data accuracy, and enhancing their decision-making capacity through accessible reporting and automation features.

3 | CORE FUNCTIONALITIES

The Sales and Collection application incorporates a series of integrated modules that collectively support the full sales-to-collection cycle, enabling efficient customer management, transaction processing, payment recording, accounts receivable monitoring, and advanced reporting. Each component is designed to improve accuracy, streamline workflow, and enhance decision-making for small and medium-sized enterprises. Customer management serves as the foundation of the system. Through the Customer List Form, users can search and sort clients by name, contact number, account balance, credit limit, or status. Double-clicking on a customer entry opens the detailed view, which facilitates editing existing records, adding new customers, reviewing account information, and generating statements. The Customer Detail Form provides a structured layout divided into sections for basic identification, communication details, financial data, and account notes. Built-in validation ensures data consistency through format checks for email and phone fields, range validation for credit limits, and detection of duplicate records. Business rules embedded within the form require authorization for high credit limits, enforce standardized payment terms, and issue warnings when status changes affect account activity. Complementing this is the Customer Account Summary, which consolidates financial information, including current balances, aging categories, available credit, transaction history, and alerts for overdue accounts or

customers on credit hold. These features assist users in evaluating credit exposure and assessing customer reliability. Furthermore, the system enables batch generation of customer statements that detail invoices, payments, adjustments, and balances, which can be printed, saved as PDFs, or emailed directly to clients.

Sales transaction processing represents the revenue-generating core of the system. The Transaction Entry Form provides a comprehensive interface for creating orders and invoices, featuring customer selection with auto-complete, automatic transaction numbering, and calculation of due dates based on predefined payment terms. The line-item grid allows users to select products, enter quantities and prices, apply discounts, and automatically calculate subtotals, taxes, and totals. The form integrates business logic to verify customer credit limits, check inventory availability (where applicable), apply price lists according to customer type, and authorize large discounts based on managerial rules. A separate Transaction List Form allows users to search and filter transactions by date, customer, salesperson, or status, displaying key information such as transaction number, date, total amount, and payment due date. Users can view or modify transactions, print invoices, void entries (with proper authorization), and export data to Excel. The invoice generation process produces professional, formatted documents containing company details, customer information, itemized products, payment terms, and due dates, which can be batch printed, emailed, or archived as PDFs. The payment processing module ensures that all payments are accurately recorded and appropriately applied to customer accounts. The Payment Entry Form captures details such as payment amount, method, date, and reference information, while simultaneously displaying all outstanding invoices for the selected customer. Users can select which invoices to pay, apply partial or full amounts, and automatically calculate totals to prevent overpayment. The system validates entries to ensure payment dates are not in the future, payment amounts are positive, and appropriate authorization is obtained for large transactions. The Payment List Form provides an organized view of payment history with filtering options by customer, date, or payment method, enabling editing, voiding, or unapplying payments if corrections are required.

The receipt generation feature produces formal payment confirmations, including details of invoices paid, payment method, and remaining balance, which can be printed or sent electronically to customers. Accounts receivable management provides the financial oversight necessary for effective collection and credit control. The Accounts Receivable Aging Report categorizes outstanding balances into time-based intervals—current, 31–60 days, 61–90 days, and over 90 days—allowing users to identify overdue accounts and prioritize follow-up actions. Filters can be applied by customer, salesperson, or category, and results can be exported to Excel for further analysis. Visual indicators highlight customers with excessive balances, exceeded credit limits, or those placed on credit hold. A complementary Customer Balance Summary provides a consolidated view of all active accounts, displaying outstanding balances, last payment details, and available credit. Drill-down features allow users to access individual customer records directly from the summary view. Additionally, the system includes a collection tracking feature that records communication history, payment commitments, disputes, and follow-up actions. Tasks can be assigned to collection staff, with built-in reminders, automated correspondence, and email integration to streamline the follow-up process. A defining feature of the application is its interactive drill-down reporting capability, which transforms static reports into navigable analytical tools. From a summary report, users can click specific figures—such as a 60-day aging balance—to view all related invoices, and then access detailed transaction and payment data through further interactions. This structure enables users to trace information seamlessly from high-level summaries to original documents, reducing the need for multiple separate reports. The drill-down mechanism is implemented using VBA event handlers, dynamic query generation, and parameter passing between reports and forms. Dashboard reports provide visual summaries of performance indicators, such as total receivables, overdue amounts, and monthly collections.

Charts display sales trends, top-performing customers, and collection progress, while clickable elements lead users directly to detailed transaction data. These features position the dashboard as the central control point for sales and collection management, facilitating quick decision-making based on real-time data. Sales analysis reports further extend this functionality, allowing performance evaluation by period, customer, product, or salesperson, and include filtering, visualization, and export options for deeper analysis. The system also supports extensive data export and integration capabilities that improve interoperability with other business tools. Data can be exported to Microsoft Excel with full formatting, formulas, and embedded charts, allowing for customized reporting and financial analysis. PDF generation is supported for invoices, statements, and other formal documents, which can be archived or shared through automated email functions integrated with Microsoft Outlook. The system can also import customer records, product catalogs, and payment data from Excel or CSV files using guided import wizards that handle field mapping and error validation. These integration features enable the application to operate seamlessly within broader enterprise environments, linking financial management with other operational systems and ensuring consistency across data sources. In essence, the core functionalities of the Sales and Collection application are designed to provide SMEs with a reliable, user-friendly, and data-driven platform for managing sales transactions and financial collections. Through its modular design, interactive reporting, and integration capabilities, the system enhances accuracy, transparency, and efficiency in business operations, supporting better financial control and informed decision-making.

4 | RESULTS AND DISCUSSION

4.1 Results

4.1.1 Query Design for Reporting

Effective reporting in Microsoft Access begins with well-structured queries that form the foundation of data retrieval and analysis. The developed application implements several query types to support comprehensive sales and collection reporting. Select Queries are designed to extract data from multiple tables using *joins*, filter data through *WHERE* clauses, sort results using *ORDER BY*, and summarize information via *GROUP BY*. Calculated Fields perform arithmetic operations (e.g., Amount * Quantity), concatenate strings (e.g., FirstName & " & LastName), compute date differences (DateDiff for aging), and apply conditional logic (IIf function for status). Aggregate Functions are employed for summarization—such as SUM for totals, COUNT for record counts, AVG for averages, and MIN/MAX for identifying ranges. Parameter Queries allow dynamic filtering based on user-defined inputs like date ranges, customer selection, and transaction status. These parameters are seamlessly integrated with forms and reports for flexible reporting. Crosstab Queries enable multidimensional reporting by pivoting data (e.g., sales by month and product, or customers by region and type). Union Queries consolidate data from multiple queries for comparative or historical analysis, while Subqueries provide complex filtering and conditional logic through nested and correlated query structures. Collectively, these techniques demonstrate the robust SQL capabilities within Access, enabling efficient data retrieval and insightful analysis.

4.1.2 Report Design Patterns

The system employs diverse reporting patterns to deliver structured and visually clear outputs. Grouped Reports display hierarchical data organization—commonly grouped by customer and invoice—with subtotal and grand total summaries. Subreports are embedded within parent reports to establish master-detail relationships, such as showing invoices within a customer record. Conditional Formatting enhances report readability through color codes (e.g., red for overdue accounts, green for current), visual alerts for exceptions (e.g., over-limit balances), and alternating row colors. Charts and Graphs visually represent performance metrics, employing bar charts for comparisons, line charts for trends, pie charts for composition, and mixed charts for multifactor analysis. Page Headers and Footers ensure consistent presentation with company logos, report titles, parameter references, page numbers, and confidentiality notices. Reports are divided into clear sections—headers, detail areas, and footers—ensuring readability and professional layout standards. Visual Basic for Applications (VBA) extends Access's native reporting capabilities by introducing dynamic functionality. Report Events such as Report_Open,

Format, and Print allow initialization, conditional formatting, and runtime calculations. Custom Functions facilitate specialized business logic, including string formatting, external table lookups, and date manipulation. Dynamic Record Sources modify report queries at runtime, enabling one report to serve multiple analytical purposes. The Drill-Down Mechanism is implemented through VBA event handling—allowing users to click elements in reports to navigate to detailed records via OpenForm or OpenReport functions with parameter passing through OpenArgs. Export Automation further enhances reporting by enabling scheduled exports in PDF, Excel, or email format using methods like DoCmd.OutputTo and DoCmd.SendObject. Performance optimization ensures responsive reporting and user satisfaction. Query Optimization is achieved through proper indexing, minimizing SELECT * usage, and filtering with WHERE rather than HAVING. Report Optimization minimizes processing load by reducing subreports, precomputing results, and using snapshots for static datasets. Data Management Strategies include archiving old transactions, creating summary tables, and partitioning data by date or region to handle large datasets efficiently. Lastly, User Experience Optimization is achieved through progress indicators, caching mechanisms, and asynchronous operations to maintain system responsiveness.

4.1.3 Implementation Best Practices

The database design adheres to normalization principles to reduce redundancy and maintain consistency. Relationships between entities are established using primary and foreign keys, with lookup tables for standardized values. Data integrity is safeguarded through referential integrity rules, validation constraints, and non-null requirements. Consistent naming conventions (e.g., tbl, qry, frm) improve maintainability, while an efficient indexing strategy enhances query performance. Appropriate data types—such as Currency, Date/Time, and Boolean—are assigned to ensure accuracy and processing efficiency. The form design prioritizes usability, validation, and efficiency. Fields are logically grouped, properly aligned, and visually balanced with sufficient whitespace. Validation rules, input masks, and helpful error messages prevent incorrect data entry. Efficient navigation is achieved through optimized tab order, shortcut keys, and intuitive buttons. Performance is maintained by limiting data loading, avoiding heavy computations in form events, and providing progress feedback for lengthy operations.



Dated	Ref No	Party Name	Item Name	Bags Nos	Weight Ton	Price	Purch Price	Amount	Remark
01-04-2020	bill 2	Kerala Traders	Cement	300	15.00	450.00	360.00	1,20,000.00	
04-04-2020	bill 1	Kerala Traders	Cement	700	10.00	470.00	360.00	80,000.00	
04-04-2020	bill 4	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	
01-04-2020	bill 1	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	
01-04-2020	bill 2	Kerala Traders	Cement	300	15.00	400.00	360.00	1,20,000.00	
04-04-2020	bill 3	Kerala Traders	Cement	200	10.00	400.00	360.00	80,000.00	
04-04-2020	bill 4	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	
01-04-2020	bill 1	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	
01-04-2020	bill 2	Kerala Traders	Cement	300	15.00	400.00	360.00	1,20,000.00	
04-04-2020	bill 3	Kerala Traders	Cement	200	10.00	400.00	360.00	80,000.00	
04-04-2020	bill 4	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	
01-04-2020	bill 1	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	
01-04-2020	bill 2	Kerala Traders	Cement	300	15.00	400.00	360.00	1,20,000.00	
04-04-2020	bill 3	Kerala Traders	Cement	200	10.00	400.00	360.00	80,000.00	
04-04-2020	bill 4	Cochin Exports	Cement	500	25.00	400.00	360.00	2,00,000.00	

Summary: Partywise Sales: 4,908; Ledger Summary: 245.00; Monthly Qty: 18,62,000.00; Ledger All: 19,60,000.00. Ex Date: Saturday 04-Apr-2020.

Figure 1. Main Application Interface of the Sales and Collection System.

Deployment requires Microsoft Access 2010 or later on a Windows environment. The .accdb file is installed locally or on a shared network location, followed by initial configuration—company data entry, tax and payment setup, and user permissions. Security settings must enable trusted access to run VBA code through the Trust Center. Training covers system navigation, data entry, payment processing, and report generation. Users receive both written and video guides. Training emphasizes real-case simulations and progressive mastery from basic to advanced features. Post-training support and documentation ensure long-term adoption and user proficiency. The system supports extensive customization to meet specific business requirements. Users can modify fields, adjust layouts, and extend reports. For advanced users, VBA allows the addition of business rules, automation, and system integrations. All modifications are documented and tested before implementation. Regular maintenance routines include daily backups, weekly compact-and-repair operations, and quarterly data reviews. Troubleshooting procedures address database corruption, performance issues, and user errors. Support is provided through internal IT staff, community forums, and Access documentation. Enhancement requests follow a structured change management process.

4.2 Discussion

The developed Sales and Collection System demonstrates a substantial improvement in business operations by streamlining data management, enhancing reporting accuracy, and supporting informed decision-making. The system automates repetitive processes, significantly reducing manual data entry and minimizing human error. Business users experience faster transaction processing and improved workflow efficiency, as sales and collection tasks are centralized within a unified platform. Real-time reporting enables management to assess financial performance and monitor account statuses promptly, which contributes to more effective decision-making. The system also enhances customer service by ensuring accurate billing and timely responses to client inquiries, while improved financial control mechanisms—such as automated aging analysis and credit limit enforcement—help reduce bad debts and maintain positive cash flow. From a technical perspective, the system serves as both a practical solution and an educational resource for developers and IT professionals. It demonstrates how relational database principles, VBA programming, and interface design can be effectively integrated within Microsoft Access to produce a scalable, data-driven application. The modular structure supports ease of maintenance and future customization, while the rapid development environment of Access reduces overall implementation time. These factors collectively make the system a cost-effective and sustainable tool for small and medium-sized enterprises (SMEs) that require automation without extensive infrastructure investment.

However, several limitations are inherent to the Microsoft Access platform. Its scalability is restricted by a maximum database size of approximately 2 GB and an optimal concurrent user limit of 10 to 20, which may not suffice for larger organizations or data-intensive environments. Platform dependency on Windows limits cross-operating system compatibility, and its architecture does not natively support mobile or web-based deployment. Additionally, the lack of advanced API integration, native cloud synchronization, and mobile accessibility restricts its adaptability for modern enterprise ecosystems. On the organizational side, effective system adoption requires sufficient user training, basic database administration skills, and ongoing technical support. Without these,

maintenance challenges and operational inefficiencies may arise. Compliance with data protection standards also remains a critical consideration, especially for industries with stringent audit and security requirements. To mitigate these constraints, several strategies can be applied. For scalability, the database can be migrated to a split architecture—where the frontend interface remains in Access and the backend is hosted in Microsoft SQL Server—to accommodate more users and larger data volumes. Reliability can be improved through systematic version control, scheduled database backups, and a separation of development and production environments. Security enhancements such as user authentication, encryption, and activity logging can safeguard sensitive information and maintain data integrity. Furthermore, maintainability can be ensured through standardized documentation, modular coding practices, and periodic technical training for staff. When implemented consistently, these strategies help sustain system reliability and longevity while reducing risks associated with data loss or corruption.

Looking ahead, there are several opportunities for enhancement. Functionally, the system could be expanded to include inventory management, purchase order processing, customer relationship management (CRM), and predictive analytics. These additions would provide greater operational visibility and assist management in forecasting sales trends and collection performance. On the technical side, modernization could involve migration to a web or cloud-based infrastructure, leveraging SQL Server or SharePoint to support browser access and mobile compatibility. Incorporating API integration would facilitate communication with external systems, while redesigning the user interface with contemporary frameworks could improve usability and user engagement. Integration opportunities also present a valuable direction for future development. The system could connect with established accounting platforms such as QuickBooks or Sage for automated journal entries and financial reconciliation. Integration with e-commerce systems would allow real-time synchronization of online orders and inventory levels, while linkage with marketing automation tools like MailChimp could streamline customer communication and campaign tracking. Furthermore, payment gateway integration would simplify online payment processing and enhance transaction efficiency. Advanced analytics through platforms like Microsoft Power BI would enable dynamic dashboards, real-time visualization, and self-service business intelligence capabilities.

Finally, expanding the system's mobile capabilities would greatly enhance accessibility and responsiveness. Mobile data collection could allow sales personnel to record transactions and process payments in the field, even without internet connectivity, while synchronization features ensure data consistency once reconnected. A customer-facing mobile or web portal could empower clients to view invoices, make payments, and update account details independently. Such advancements would not only extend system reach but also align it with the growing demand for mobility and real-time business interaction. In conclusion, while the current Sales and Collection System provides a solid foundation for efficient business operations, its potential can be significantly expanded through strategic technical and functional improvements. By addressing existing limitations and leveraging future integration and mobility opportunities, the system can evolve into a more robust, scalable, and future-ready platform capable of supporting broader organizational needs.

5 | CONCLUSION AND RECOMMENDATIONS

The Sales and Collection System developed on the Microsoft Access platform illustrates how a carefully designed database application can optimize business operations, improve data accuracy, and strengthen financial decision-making. Through the integration of innovative reporting features, particularly interactive drill-down capabilities, the system converts static records into dynamic, actionable insights that assist management in analyzing performance and identifying collection priorities. It effectively supports the full sales-to-collection process—encompassing customer management, transaction processing, payment tracking, and reporting—within a cohesive and user-friendly framework. The system's primary strengths lie in its complete functional coverage, intuitive interface, and flexible architecture that allows for customization without extensive technical expertise. Its ability to automate repetitive tasks, minimize manual data entry, and maintain real-time visibility over financial activities significantly enhances operational efficiency. Moreover, the use of Visual Basic for Applications (VBA) enables automation, event-driven functionality, and dynamic reporting, demonstrating practical applications of programming within Microsoft Access. These qualities make the system not only a reliable business tool but also a valuable learning resource for developers seeking to understand modern database application design and implementation. Despite these advantages, Microsoft Access carries inherent limitations related to scalability, platform dependency, and integration with contemporary technologies. Its optimal performance is typically limited to small or medium-sized businesses with moderate data volumes and user activity. Furthermore, Access lacks native web or mobile support, which may restrict deployment in environments that require remote accessibility or cloud-based functionality. Nevertheless, when used within its intended scope, the system provides capabilities comparable to more complex and costly enterprise solutions. It demonstrates that when applied with solid design principles, Access remains a powerful and economical platform for small to medium business systems. For

organizations considering implementation, the system is most effective in small or single-location operations with moderate daily transactions and a Windows-based infrastructure. Prior to deployment, businesses should assess operational requirements, identify existing workflow challenges, and align system functionality with strategic objectives.

Successful adoption depends on management commitment, proper hardware support, user training, and clear communication about the system's scope and capabilities. It is advisable to begin with core functions before introducing advanced features, allowing users to build confidence and familiarity over time. Continuous performance monitoring and user feedback will further support system optimization and long-term success. From a development perspective, the system provides a robust reference model for understanding Access-based solutions. Developers can explore its normalized database structure, modular VBA code, and report design patterns to gain insight into best practices for scalable and maintainable applications. Opportunities for customization include adapting forms and reports to industry-specific workflows, integrating the system with accounting or e-commerce platforms, and updating the interface for a more modern experience. Maintaining comprehensive documentation, employing version control, and adhering to coding standards are essential for ensuring sustainability and ease of future enhancement. At the community level, this project highlights the continuing relevance of Microsoft Access as a practical platform for business solutions. It showcases the potential of Access when combined with structured design, disciplined coding, and innovative reporting techniques. Collaboration within the Access development community—through sharing knowledge, improving existing code, and creating educational materials—can extend the life and value of this system. By exchanging solutions and encouraging best practices, developers can strengthen the ecosystem and ensure that Access remains a viable, adaptable tool for small and medium enterprise development. In conclusion, the Sales and Collection System stands as evidence that appropriate technology, when applied thoughtfully, can resolve complex business challenges efficiently and affordably. It balances functional depth with accessibility, empowering organizations to manage their sales and collection processes with greater precision and control. For developers, it serves as both a learning framework and a foundation for innovation; for businesses, it offers a cost-effective path toward digital transformation. With continuous refinement and community collaboration, this system has the potential to evolve into an even more capable and scalable platform, supporting the long-term growth and efficiency of small and medium-sized enterprises.

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REFERENCES

- Addison-Wesley. (2013). *Database design for mere mortals* (3rd ed.). M. Hernandez.
- Ahn, E., Liu, N., Parekh, T., Patel, R., Baldacchino, T., Mullavey, T., ... & Kim, J. (2021). A mobile app and dashboard for early detection of infectious disease outbreaks: Development study. *JMIR Public Health and Surveillance*, 7(3), e14837. <https://doi.org/10.2196/14837>
- Alexander, M., & Kusleika, D. (2018). *Access 2019 Bible*. Wiley.
- Andriani, W., Rosalina, E., Sriyuni, F., Afrizon, F., & Aprila, D. (2023). Perancangan database akuntansi menggunakan Microsoft Access pada usaha konveksi Taylor Abadi. *Jurnal Sains dan Informatika*, 9(1), 30–36. <https://doi.org/10.22216/jsi.v9i1.1643>
- Barus, D., Silalahi, H., & Kurnia, B. (2024). Optimizing tax revenue through strategic management utilizing tax gap dashboard in Indonesia. *Educoretax*, 4(4), 526–540. <https://doi.org/10.54957/educoretax.v4i4.804>

- Dharmawan, W. (2025). Penerapan model rapid application development dalam pembuatan sistem informasi akuntansi penjualan dan pembelian berbasis web. *Jurnal Sistem Informasi Akuntansi*, 6(1), 65–73. <https://doi.org/10.31294/justian.v6i1.8803>
- Farida, Y., & Desinaini, L. (2021). Designing a Microsoft Access-based administration letters and archives system at BPJS of Employment Regional Office of East Java. *Matrix: Jurnal Manajemen Teknologi dan Informatika*, 11(1), 42–54. <https://doi.org/10.31940/matrix.v11i1.2334>
- Gill, A., Kang, P., & Amiraslany, A. (2022). Information technology investment and working capital management efficiency: Evidence from India survey data. *South Asian Journal of Business Studies*, 12(4), 559–574. <https://doi.org/10.1108/sajbs-06-2021-0239>
- Gupta, V., & Batra, S. (2016). Entrepreneurial orientation and firm performance in Indian SMEs: Universal and contingency perspectives. *International Small Business Journal: Researching Entrepreneurship*, 34(5), 660–682. <https://doi.org/10.1177/0266242615577708>
- Hidayat, A., Rahman, A., Marisda, A., Arhab, G., Kamila, N., Prabowo, R., ... & Santosa, S. (2024). Use of databases to manage sales results data at the KDH Sancang Coffee Shop. *JASTH*, 1(1), 11–18. <https://doi.org/10.62535/hx4h5d16>
- Kaur, P., Kaur, N., & Kanojia, P. (2021). Firm innovation and access to finance: Firm-level evidence from India. *Journal of Financial Economic Policy*, 14(1), 93–112. <https://doi.org/10.1108/jfep-07-2020-0161>
- Longenecker, J., Petty, J., Palich, L., & Hoy, F. (2016). *Small business management*. Cengage Learning.
- Microsoft Corporation. (n.d.). *Microsoft Access documentation*. <https://support.microsoft.com/access>
- Microsoft Docs. (n.d.). *Access developer reference*. <https://docs.microsoft.com/office/vba/api/overview/access>
- Msomu, T., & Kandolo, K. (2023). Sustaining small and medium-sized enterprises through financial awareness and access to digital finance in South Africa. *Investment Management and Financial Innovations*, 20(1), 317–327. [https://doi.org/10.21511/imfi.20\(1\).2023.27](https://doi.org/10.21511/imfi.20(1).2023.27)
- Nasrallah, C., Wilson, C., Hamblin, A., Hariz, C., Young, C., Li, J., ... & Schmajuk, G. (2024). Patient perceptions of an electronic health record-based rheumatoid arthritis outcomes dashboard: A mixed-methods study. *BMC Medical Informatics and Decision Making*, 24(1). <https://doi.org/10.1186/s12911-024-02696-9>
- Praharaj, S., Solís, P., & Wentz, E. (2022). Deploying geospatial visualization dashboards to combat the socioeconomic impacts of COVID-19. *Environment and Planning B: Urban Analytics and City Science*, 50(5), 1262–1279. <https://doi.org/10.1177/23998083221142863>
- Rabiei, R., Bastani, P., Ahmadi, H., Dehghan, S., & Almasi, S. (2024). Developing public health surveillance dashboards: A scoping review on the design principles. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-17841-2>
- Romney, M. B., & Steinbart, P. J. (2017). *Accounting information systems* (14th ed.). Pearson.
- Sarhan, A., Rokne, J., & Alhajj, R. (2018). Integrating flexibility and fuzziness into a question-driven query model. *Information Sciences*, 430–431, 349–377. <https://doi.org/10.1016/j.ins.2017.11.049>
- Shamim, T., & Ahmad, N. (2025). Mapping the intellectual landscape of digital financial inclusion, MSMEs and entrepreneurship in India. *SEDME (Small Enterprises Development Management & Extension Journal)*, 52(3), 314–330. <https://doi.org/10.1177/09708464251363283>
- Sin, C., Kim, H., Im, H., Ock, M., & Koh, S. (2023). Development and pilot study of “Smart Cancer Care”: A platform for managing side effects of chemotherapy. *BMC Health Services Research*, 23(1). <https://doi.org/10.1186/s12913-023-09871-0>
- Stahlman, G., Yanovitzky, I., & Kim, M. (2024). Design, application, and actionability of US public health data dashboards: Scoping review (preprint). <https://doi.org/10.2196/preprints.65283>



Stahlman, G., Yanovitzky, I., & Kim, M. (2025). Design, application, and actionability of US public health data dashboards: Scoping review. *Journal of Medical Internet Research*, 27, e65283. <https://doi.org/10.2196/65283>

VBA and Macros for Microsoft Access. (2018). B. Jelen & T. Syrstad. Que Publishing.

Zaçaj, O., Beliu, E., Raço, E., Haxhi, K., & Hila, K. (2022). Comparative approach of tracking COVID-19 in Balkan countries using interactive web-based dashboard. *Interdisciplinary Perspectives on Infectious Diseases*, 2022, 1–6. <https://doi.org/10.1155/2022/8627956>

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