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Web-Based Application for Sales of Water Depot Accessories and Equipment at VQ Air Store

Sania Adawiah[1], Adjat Sudrajat[2], Ahfi Fauka[3], Rizal Parghani[4]
[1,2,3,4] STMIK Mardira Indonesia, Bandung
Email: saniaadawiah353@gmail.com[1], ajat.sudrajat@stmik-mi.ac.id[2], ahfi@stmik-mi.ac.id[3], rizal.parghani@stmik-mi.ac.id[4]

Abstract

An online shop website refers to a website that is equipped with an e-commerce system, allowing users to engage in transactions. In addition to the requirement of loading product offerings, the website must also possess inventory management capabilities, automated shipping cost estimates, and support for manual and automated payments using a Payment Gateway.

This research aims to develop an application that facilitates the sale of accessories and supplies required for a gallon of drinking water depot at the VQ WATER store. This application will be directly linked to the website and provide comprehensive information about the VQ Water Depot Gallon Shop, including prices and purchasing instructions. The aim is to enhance user convenience when locating depot equipment. The research methodology employed in this final project is the Waterfall approach, which incorporates UML modeling. The attained outcomes manifest as an internet-based sales application accessible through a website, facilitating the exploration of depot equipment requirements. The final project entails the development of a website-based online sales application that facilitates the convenient purchase of gallon depot products. This application provides users with visual representations of accessories and equipment, their respective costs and purchasing instructions.

Keywords: *Online Sales, Website, Waterfall Method, UML*

Introduction

In the age of globalization, the business landscape has gotten exceedingly intricate and necessitates unwavering focus for anybody seeking a comprehensive understanding of it. The dynamic nature of business environments necessitates prompt responses from company entities to continuously changing consumer preferences. While some individuals prioritize their careers, others focus on consumer products and the corporations that constitute the global economy. The business operations at the VQ Water Store encompass a range of activities, including placing orders, making payments, arranging locations, overseeing financial matters, procuring products, and establishing pricing. (Bupu, Zaman & SUGENG, 2021; Irawan & Perindustrian, 2020; Soraya & Wahyudi, 2021)

Sales are the lifeblood of MSME businesses like the VQ Water Shop, actively transferring the commodities they manufacture to those who require them in return for monetary compensation at a mutually agreed-upon price. High sales activity not only indicates a significant demand for the goods or services the company offers but also generates earnings that are used to enhance the production of accessories and drinking water depot equipment. These shops make continuous efforts to attract consumers and understand their preferences to expand their attractiveness. (Anjum, Shahab & Umar, 2022; Yılmaz Kaya & Dağdeviren, 2023; Yaqin, Listyorini & Supriyati, 2023)

The "VQ WATER" shop is a micro, small, and medium enterprise (MSME) trading unit that offers various accessories and equipment specifically designed for drinking water depots. Efficiently documenting the numerous options necessitates meticulous entry in the ledger, encompassing item names, quantities, pricing, and all sales transactions. Manual recording by employees frequently leads to challenges during the consolidation of sales transactions at the end of the month, resulting in inaccuracies and reduced reporting effectiveness and efficiency.

The incorporation of information technology in the corporate realm has become obligatory. Information technology offers significant convenience and efficiency in multiple areas of business operations, such as sales and

data administration. Web-based information systems have numerous benefits, including convenient access, improved time efficiency, and enhanced data organization. (Andipradana & Hartomo, 2021; Mulyanto & Setiawan, 2020; Widiana, Sintaro, Arundaa, Alfonsius & Lapihu, 2023)

The VQ Water Store's proposed web-based application is designed to automate the entire sales process, from stock recording to ordering, payment, and the generation of financial data. This method not only aims to mitigate the occurrence of recording errors commonly found in manual systems but also significantly enhances operational efficiency in stores, thereby improving sales accuracy and reporting.

Technology in the business realm includes hardware, such as computers, and software programs that streamline work processes. Web-based apps are the optimal answer in this scenario since they are accessible at any time and from any location, as long as there is an internet connection. This program also enables enhanced and unified data administration with increased security. (Noviana, 2022; Sari, Syahputra, Zaky, Sibuea & Zakhir, 2022; Syabania & Rosmawarni, 2021)

The primary objective of this study is to create a web-based application for the VQ Water Store, with the specific goal of enhancing the efficiency and efficacy of store operations. This application is specifically tailored to cater to stores' requirements for efficiently handling the sales of accessories and equipment related to drinking water depots. The primary functionalities to be implemented in this application encompass stock management, online ordering, payment systems, and automated financial report generation.

Stock management is a crucial requirement for this application. Effective inventory management enables stores to accurately track the quantity of available items, identify out-of-stock items, and determine which needs replenishment. This system will also offer automated notifications when stock is nearing the minimal threshold, enabling the business to promptly initiate a reorder. (Faqih & Wahyudi, 2022; Alpina & Witriyono, 2022; Putra & Lolly, 2021)

Implementing the online ordering option would enhance customers' convenience in making their orders. Users can access the product catalog, choose the things they want, and make orders straight within the application. This system will additionally document all transactions conducted, facilitating the generation of sales reports.

The payment mechanism in this program is designed to accommodate many payment methods, including bank transfers, credit cards, and e-wallet payments. Therefore, clients have the option to select the method that is most convenient for their needs. This system will also document all payment transactions conducted, facilitating the preparation of financial reports.

This program's much-anticipated feature includes an automated function for generating financial reports. This solution eliminates the need for shops to record information manually, saving time and reducing the risk of errors. The application will automatically generate financial reports using transaction data stored in the system. The report is accessible at any moment and can be used for financial analysis and decision-making.

The research methodology employed in developing this application is the information system development methodology, which encompasses needs analysis, system design, implementation, and testing. The needs analysis stage is conducted to establish the precise requirements of the store and ascertain the essential elements that must be incorporated into the application. The system design step includes the creation of application designs and database designs. The implementation step involves developing the application according to the previously created design. The testing step is conducted to verify the proper functionality and alignment with the program's user requirements.

This research will utilize various materials and references about advancing web-based information systems. In addition, interviews and direct observations were conducted at the VQ Water Store to obtain more comprehensive information about the store's needs and challenges. The data collected from interviews and observations will be utilized to create and construct applications tailored to meet the shop's specific requirements.

This web-based program aims to enhance operating efficiency, minimize recording errors, and deliver superior customer experience at the VQ Water Store. In addition, this application is anticipated to assist retailers in enhancing their competitiveness and boosting their revenue.

This research greatly contributes to the advancement of web-based information systems for Micro, Small, and Medium Enterprises (MSMEs). The findings of this study, a versatile resource, can serve as a valuable guide for other micro, small, and medium enterprises (MSMEs) facing similar challenges. By adapting the insights to their unique contexts, these enterprises can implement information technology to enhance operational effectiveness and gain a competitive edge in the business arena. Hence, this research is advantageous not only for the VQ Water Store but also for the advancement of Micro, Small, and Medium Enterprises (MSMEs) as a whole, making them feel included and considered.

Ultimately, implementing a web-based application for the VQ Water Store to offer drinking water depot accessories and equipment is the optimal way to address the store's diverse challenges. Retailers can enhance operational efficiency, minimize recording errors, and deliver superior customer service through information technology. This project aims to contribute substantially to advancing web-based information systems for MSMEs and assist them in addressing business issues in the era of globalization.

In response to these issues, a computerized sales system was developed to streamline data management about accessories, drinking water depot equipment, and transactions at the VQ Water Store. This study aims to develop an online application for the VQ Water Store, which specializes in supplying accessories and equipment for drinking water depots, to enhance its competitive edge over other businesses. The details of this study are presented in an article titled "Web-Based Application for the Sale of Accessories and Equipment at VQ Water Stores, a Drinking Water Depot."

Research Method

This study employs the Waterfall methodology and UML (Unified Modeling Language) modeling to create and implement a web-based application for the sale of drinking water depot accessories and equipment at the VQ Water Store. The Waterfall technique was selected due to its methodical and structured approach, requiring the completion of each stage before the commencement of the following level. The Waterfall technique consists of several stages, namely requirements analysis, system design, implementation, testing, and maintenance. During the needs analysis stage, data was gathered through interviews and direct observation at the VQ Water Store to comprehend the unique requirements pertaining to the sale of drinking water depot accessories and equipment. The outcome of this phase is a document outlining the system requirements specification, which encompasses the essential functionalities that the application must possess, such as inventory management, an automated shipping cost calculator, and a payment system.

The system design stage encompasses the development of the system's architecture, user interface, and database design. UML modeling is employed to visually depict systems using use case, class, activity, and sequence diagrams. Implementation involves creating an application using a suitable programming language and framework, depending on the previously designed plan. Testing encompasses unit testing, integration testing, and system testing to verify the proper functioning of the program and its alignment with user requirements. The maintenance stage is conducted to address any faults or issues discovered after the application has been deployed, as well as to enhance and update functionality based on user requirements.

This project aims to develop a web-based sales application for VQ Water Stores. This application will streamline the process of selling drinking water depot accessories and equipment. This program aims to enhance user convenience by facilitating product discovery and purchase, streamlining inventory management and shipping cost estimates, and accommodating multiple payment methods. The research concludes that the Waterfall

technique and UML modeling are helpful in designing and creating applications that efficiently and systematically suit the needs of the VQ Water Store, enabling them to manage sales more effectively.

Results and Discussion

This examination examines the operational aspects of a functioning firm as a foundation for the design or enhancement of existing systems. Based on the findings of this research, it is possible to build a more effective and efficient system. Creating a system that is both successful and efficient necessitates the consideration of multiple aspects. The factors encompassed are human resources, hardware, and software. Human resources refers to individuals who manage a program or develop an application. Hardware refers to the tangible components of a computer system, whereas software encompasses a set of instructions designed for specific applications and the operation of the hardware. Collected data from research, observation, or interviews can be a reliable reference for website creation.

The existing system managed by the administrative department of the VQ Water Shop operates manually, with purchasers making direct manual purchases. However, when clients from out-of-town place orders through social media.

An application has been developed to facilitate remote product purchasing. Customers can use this application to purchase VQ water products. Once a customer places an order, the administrator verifies and processes it, including delivery and payment transactions. Additionally, the administrator generates reports for superiors.

a. Running System Analysis

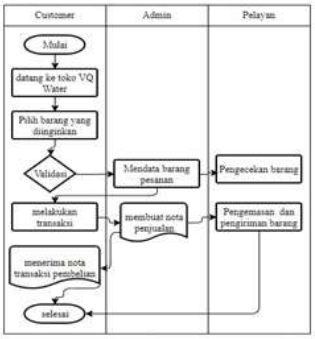

Figure 1. Current System Analysis

b. Analysis of the Proposed System

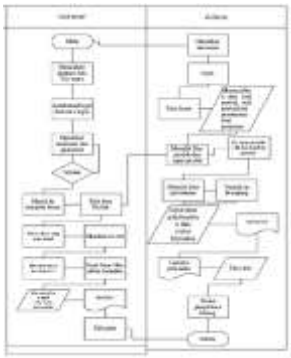

Figure 2. Proposed System Analysis

The system design stage encompasses creating the system's architecture, user interface, and database design that will be utilized. UML modeling is employed to visually depict systems using use case, class, activity, and sequence diagrams. The implementation process involves creating an application using a suitable programming language and framework based on the previously designed plan. Testing encompasses unit, integration, and system testing to verify that the program operates correctly and fulfills user requirements. The maintenance stage is conducted to address any faults or issues discovered after the application

has been deployed and to enhance and upgrade features based on user requirements.

The system implementation stage involves the detailed description and preparation of an application system to ensure its readiness for operation. During this phase, the development team will implement all the functions and features previously designed in the design stage. System implementation entails the utilization of diverse technologies and software development tools. The development team must ensure all system components' compatibility and seamless integration. A significant obstacle during the implementation phase is guaranteeing seamless integration among the many modules and components of the system. Developers must also prioritize security considerations throughout the implementation phase. Implementation errors can lead to system malfunction or susceptibility to assaults. Consequently, executing each step in the implementation stage with meticulous care and strategic planning is imperative.

1. Login Page Display

Figure 3. Login page display

2. Home Page/Dashboard Display

Figure 4. Home Page/Dashboard Display

3. Deposit Page View

Figure 5. Deposit Page Display

Conclusion

The research findings indicate that the developed system is a mobile-responsive information system designed to facilitate daily deposits. This system facilitates daily monitoring of deposit transactions for administrators and managers due to its mobile responsiveness. When accessed on a smartphone, the display adjusts to fit the screen.

Other recommendations can serve as input and contemplation for future studies. The application can be adapted to incorporate technical advancements as they occur. This program has the potential to be enhanced in terms of its visual design, functionality, and system security, surpassing its previous version.

References

Anjum, M., Shahab, S., & Umar, M. S. (2022). Smart waste management paradigm in perspective of IoT and forecasting models. International Journal of Environment and Waste Management, 29(1), 34-79.

Yılmaz Kaya, B., & Dağdeviren, M. (2023). Optimal Solution Accoutrement for Crew Scheduling Problem: An Innovative Solution Approach Predicating on a Tailor-Made DSS. International Journal of Information Technology & Decision Making, 22(04), 1489-1527.

Yaqin, M. A., Listyorini, T., & Supriyati, E. (2023). Aplikasi E-Commerce Berbasis Android Yang Terintegrasi Payment Gateway Pada Pondok Grafis. Jurnal Dialektika Informatika (Detika), 4(1), 19-25.

Bupu, M. G., Zaman, B., & SUGENG, S. (2021, September). Penerapan Metode ABC System Dalam Menentukan Harga Pokok Kamar Pada Lotus Kediri Tahun 2020. In Prosiding Seminar Nasional Manajemen, Ekonomi, Akuntansi dan Callpaper (Vol. 6, No. 1, pp. 744-748). Fakultas Ekonomi Universitas Nusantara PGRI Kediri.

Irawan, D., & Perindustrian, K. D. (2020). Industri Produk Tekstil (Apd) Jawa Timur Meningkat Di Tengah Pandemi Covid-19. Merdeka Berpikir: Catatan Harian Pandemi Covid-19, 111.

Soraya, A., & Wahyudi, A. D. (2021). Rancang Bangun Aplikasi Penjualan Dimsum Berbasis Web (Studi Kasus: Kedai Dimsum Soraya). Jurnal Teknologi dan Sistem Informasi, 2(4), 43-48.

Andipradana, A., & Hartomo, K. D. (2021). Rancang Bangun Aplikasi Penjualan Online Berbasis Web Menggunakan Metode Scrum. Jurnal Algoritma, 18(1), 161-172.

Mulyanto, A., & Setiawan, W. (2020). Penerapan Metode Web Engineering Menggunakan Laravel 5 Dalam Pengembangan Penjualan Toko Online Hijapedia Berbasis Website Di Cikarang Bekasi. Jurnal Informatika SIMANTIK, 5(2), 18-23.

Widiana, S. A., Sintaro, S., Arundaa, R., Alfonsius, E., & Lapihu, D. (2023). Aplikasi Penjualan Baju Berbasis Web (E-Commerce) dengan Formulasi Penyusunan Kode. Journal of Information Technology, Software Engineering and Computer Science, 1(1), 35-43.

Noviana, R. (2022). Pembuatan aplikasi penjualan berbasis web monja store menggunakan php dan mysql. Jurnal Teknik dan Science, 1(2), 112-124.

Sari, I. P., Syahputra, A., Zaky, N., Sibuea, R. U., & Zakhir, Z. (2022). Perancangan sistem aplikasi penjualan dan layanan jasa laundry

sepatu berbasis website. Blend sains jurnal teknik, 1(1), 31-37.
Syabania, R., & Rosmawarni, N. (2021). Perancangan Aplikasi Customer Relationship Management (Crm) Pada Penjualan Barang Pre-Order Berbasis Website. Jurnal Rekayasa Informasi, 10(1), 44-49.
Faqih, A. S., & Wahyudi, A. D. (2022). Rancang Bangun Sistem Informasi Penjualan Berbasis Web (Studi Kasus: Matchmaker). Jurnal Teknologi dan Sistem Informasi, 3(2).
Alpina, D., & Witriyono, H. (2022). Pemanfaatan Framework Laravel Dan Framework Bootstrap Pada Pembangunan Aplikasi Penjualan Hijab Berbasis Web. Jurnal Media Infotama, 18(1), 36-42.
Putra, M. Y., & Lolly, R. W. R. (2021). Sistem aplikasi penjualan souvenir berbasis web menggunakan Metode Rapid Application Development (RAD). Information System For Educators And Professionals: Journal of Information System, 5(2), 151-160.