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Implementation of a Web-based Income Statement Accounting Information System: a Case Study at Toko Amanah Kepanjen, Malang Regency

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A B S T R A C T

The aim of this research is to determine the efficiency and effectiveness after implementing an accounting information system for income statements at Toko Amanah. This study uses applied research with a Research & Development (R&D) method and employs the ADDIE approach, which includes Analysis, Design, Development, Implementation, and Evaluation. Data collection was carried out through observation and interviews with research subjects, as well as questionnaires for application testing. The result of this research is a website that includes sales, inventory, and income statement reports, which were previously managed manually. The implementation of a web-based accounting information system has proven to enhance the effectiveness and efficiency of the subject, as well as improve the accuracy of the reports generated. After the system design has been completed, the system is tested by users, IT experts, and subject matter experts.

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INTRODUCTION

Companies that continue to grow must create and maintain a competitive advantage by consistently enhancing their competitiveness. Kurniawati & Permadi (2011) argue that improving company performance can be achieved through the implementation of information technology in company activities, which can enhance competitive edge and performance. Technology-based information systems can produce accurate information systems to support a company's performance. A good accounting information system is expected to help a company manage its finances and generate credible financial reports for decision-making. A company can be categorized as well-performing if it operates effectively, efficiently, accurately, and reliably with high precision.

The advantage of web-based applications in accounting information systems for income statements is that they are not limited to just one or two systems; users can access them through commonly used devices and web browsers, regardless of whether they are using Windows, macOS, Linux, or mobile devices. Web-based applications for accounting information systems can also save storage space. Therefore, users do not need to install the application on their devices, which would otherwise consume significant storage space. Users only need to access the application by visiting the appropriate web application site.

Toko AMANAH is a retail company focused on distributing staple goods to customers. The problem faced by Toko AMANAH is the use of a traditional accounting information system that requires substantial time and effort to manage inventory and process transactions. Without an integrated system, the store struggles to track inventory accurately, which can lead to stock shortages or surpluses and result in losses.

Currently, the shopping process at Toko AMANAH is still conventional, where customers must approach the sales admin, who then records the purchased items before sending this information to the warehouse section. This procedure causes long queues when many customers come. The conventional system can result in human errors in calculations and take a long time for service, thus slowing down service speed. This problem arises because all activities are still conducted manually and are inefficient. Manual recording at Toko AMANAH involves the cashier noting the purchased or ordered items on a receipt, the warehouse section logging the issued inventory in the warehouse inventory book, and at the end of the day, the sales and warehouse sections checking the consistency between the sold items on the receipt and the stock issued by the warehouse in the inventory book. The finance admin records daily sales reports in the sales report book, while the warehouse admin summarizes the required stock and submits the report to the store owner. These issues significantly impact Toko AMANAH's operations as they involve crucial inventory components.

Several previous studies have been conducted to address issues related to accounting information systems (AIS). Hermawan & Fauzi (2021) analyzed problems with the manual cashier system in sales services. Their research explained that a web-based information system could ease the cashier and admin in obtaining accurate data and simplify administrative tasks in data storage and

processing. Suminten (2020) addressed issues with a simple cashier system recorded in a book, which often led to errors in recording and difficulties in data retrieval. Their research showed that a new web-based system simplifies inventory input, transaction reporting, and stock management while saving time, thereby enhancing employee performance. This research differs from previous studies by integrating the sales section with the inventory section, allowing sales admins to view available stock in the warehouse, and enabling the store owner to access all system menus.

Based on the issues faced by the research subject, the proposed solution to address the problems at Toko AMANAH is to create a Web-Based Income Statement Application that integrates the sales section with the warehouse section.

THEORETICAL REVIEW

Accounting Information System

Khan (2016) defines an accounting information system as a system for collecting, storing, and processing financial data used for decision-making. This system employs modern information technology resources to track accounting activities related to information technology. It is designed to provide users with the financial information needed to manage an organization.

Romney, M. B., & Steinbart (2015) describe six components of an Accounting Information System (AIS) as follows: 1) The people who use the system, 2) The procedures and instructions used to collect, process, and store data, 3) The data about the organization and its business activities, 4) The software used to process the data, 5) The information technology infrastructure, including computers, peripheral devices, and network communication tools used in the AIS, and 6) Internal controls and security measures that protect AIS data. An Accounting Information System (AIS) also has a general model that describes all information systems, regardless of their technological architecture. The elements of the general model include end users, data sources, data collection, data processing, database management, information creation, and feedback (Hall, 2011).

Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are business activities with the potential to enhance job opportunities, significantly contribute to income distribution efforts, stimulate economic growth, and play a role in achieving national economic stability. MSMEs can refer to businesses operated by individuals, households, or small enterprises. The classification of MSMEs depends on limitations related to annual revenue, asset size, and the number of employees. In contrast, entities not classified as MSMEs or considered large enterprises are productive economic activities conducted by business entities with net assets or annual sales exceeding the medium-sized enterprise threshold.

MSMEs are regulated and categorized under Government Regulation No. 7 of 2021, which divides MSMEs into three types:

1. **Micro Enterprises** are productive enterprises owned by individuals and/or individual business entities that meet the criteria for micro enterprises.

2. **Small Enterprises** are independent productive economic enterprises operated by individuals or business entities that are not subsidiaries or branches of medium or large enterprises and meet the criteria for small enterprises.
3. **Medium Enterprises** are independent productive economic enterprises operated by individuals or business entities that are not subsidiaries or branches of small or large enterprises and meet the criteria for medium enterprises.

Website

A website is a collection of web pages accessible via the internet, typically organized under a single domain or site name. Websites generally include various types of media such as text, images, videos, and interactive elements designed to provide information, services, or entertainment to visitors. Websites can be categorized based on their function and usage. Here are some types of websites:

a. Static Website: A static website has content that remains unchanged unless manually updated by the administrator. It is typically used to present information that does not frequently change.

b. Dynamic Website: A dynamic website features content that can change automatically based on user interactions or data retrieved from a server. It uses server-side technology to manage content in real-time.

c. E-Commerce Website: An e-commerce website allows for automatic content changes based on user interactions or data from a server. It also employs server-side technology to manage content in real-time.

d. Blog Website: A blog website is used for regularly publishing articles, opinions, or news. It is managed by individuals or groups with a focus on specific topics.

e. Social Media Website: A social media platform allows users to interact, share content, and communicate. Social media websites also provide features such as user profiles, news feeds, and messaging systems.

f. Portfolio Website: A portfolio website is used to showcase an individual's or an organization's work or projects. This type of website is often used by professionals like designers, photographers, or artists to display their work.

g. Educational Website: An educational website provides educational materials, courses, and resources for learning. This can include course modules, exams, and discussion forums.

h. Forum Website: A forum website enables users to discuss and exchange information in the form of threads or topics. It provides features for posting, replying, and managing discussions.

Income Statement

The income statement measures the success of a company over a specific period, allowing businesses to assess their financial situation for the future (Nurmalasari et al., 2019). The income statement records all revenues and expenses related to business operations within a defined time period. It includes all earnings and expenses recognized during that period. Earnings refer to the

increase in economic benefits during the reporting period in the form of cash inflows or asset increases, or decreases in liabilities that result in an increase in equity not derived from capital contributions. Expenses refer to the decrease in economic benefits during the reporting period in the form of cash outflows or asset reductions, or increases in liabilities that result in a decrease in equity not caused by distributions to shareholders. In the Financial Accounting Standards for Micro, Small, and Medium Entities (SAK EMKM), the income statement for entities may include the following accounts:

a. Revenue
b. Financial expenses
c. Tax expenses

METHODOLOGY

The type of research conducted in this study is Research & Development (R&D). According to Sugiyono (2014), R&D involves basic research activities to gather information on user needs (needs assessment), followed by development activities to create a product and evaluate its effectiveness. The goal of R&D is to improve the quality of products or services, reduce production costs, enhance operational efficiency, and increase the company's competitiveness.

This study uses the ADDIE approach, which is an instructional development model consisting of five stages: Analysis, Design, Development, Implementation, and Evaluation. The Analysis stage involves assessing needs, while the Design stage includes setting objectives and designing the structure and content. The Development stage encompasses system development through programming and testing. The Implementation stage involves applying the system to the research object. The Evaluation stage includes formative and summative evaluation (Dick & Carey, 2015). The ADDIE instructional model is a dynamic instructional process consisting of five phases: analysis, design, development, implementation, and evaluation.

The data collection methods used in this study include: first, conducting direct observations of the research object. Second, interviewing the owner and several employees of the object. Third, distributing questionnaires to users, IT experts, and subject matter experts to assess the feasibility of the system.

RESULTS

Design System

The system design aims to create a system that meets the needs of the research object, as analyzed in the previous stage. This stage involves designing the User Interface (UI) and User Experience (UX). UI is a combination of grids, layouts, typography, colors, animations, and micro-interactions that are integrated to create a smooth and natural interaction. Information architecture, determined by User Experience (UX), contributes to a well-designed UI. UX focuses on defining and studying how easy it is to use a

product, whether it is a digital product, interface, navigation pattern, or communication. The goal of UX is to enable a user group to understand and use a product effectively.

On the initial screen, the system will display a login page. Then, there are five main menus: Dashboard, Sales, Expenses, Income Statement, and Products.

- The **Dashboard** menu will show daily and monthly revenue.
- The **Sales** menu will display sales transactions.
- The **Expenses** menu will show expense transactions.
- The **Income Statement** menu will present an automatically generated income statement.
- The **Products** menu will display the products that are still available.

Develop System

Several stages are involved in the system development process. First, design the system based on the UI and UX designs, which serve as a reference for developing the form and appearance of the web-based accounting income statement system. Second, prepare hosting and a domain. A domain is the address used to access the website, while hosting is used to store the website's files and data for internet access. Third, set up plugins, which are additional programs that enhance the functionality of the main program. Fourth, perform coding and system configuration by implementing all the prepared tools. The final stage is system testing to ensure that the designed software can perform the specified functions.

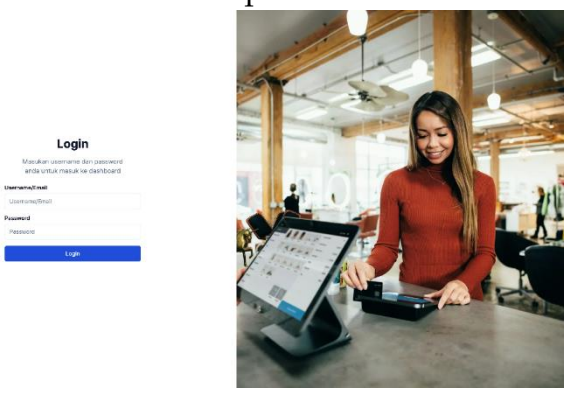
DISCUSSION

Web-based Income Statement Accounting Information System

After completing the design and development stages, the following are the results of the web-based accounting income statement system:

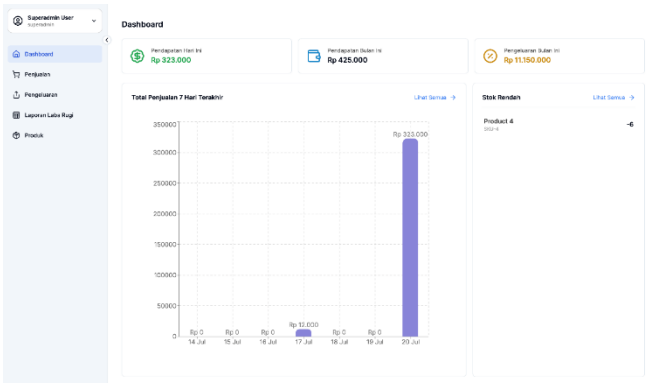
a. Login page

The login page is the entry point for accessing the web-based accounting income statement system for the store. The login page can be accessed by three types of users. First, the Owner, who can access all features. Second, the cashier admin, who can only access the sales menu. Third, the warehouse admin, who can only access the products menu. To ensure data control and security, the login page requires the entry of a valid email and password.



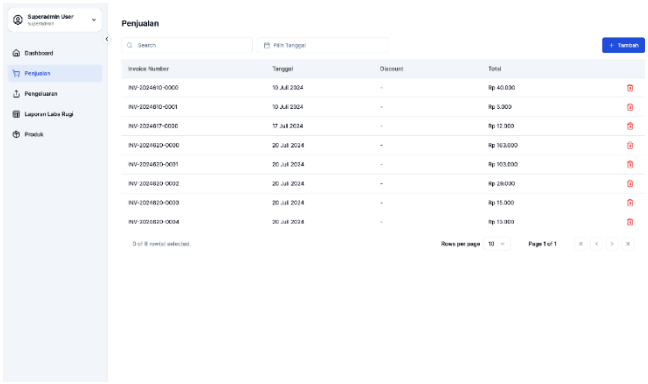
b. Dashboard Menu

This page displays today's revenue, product stock, today's expenses, and total sales for the past 7 days. This data includes several pieces of information deemed important.



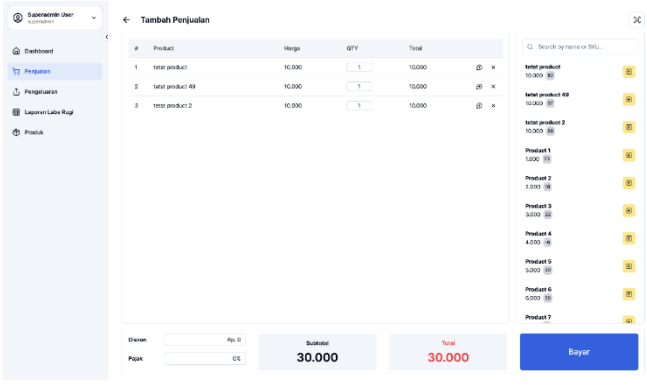
c. Sales Menu

In the sales menu, there are features for data search, selecting the desired date to search transactions, adding sales transactions, and deleting sales transactions. The recorded data includes the invoice number, transaction date, discount, and total sales.



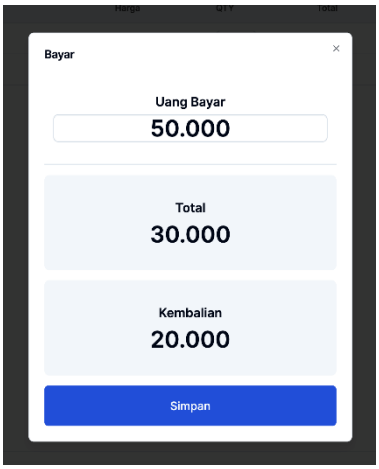
d. Add Sales Menu

The "Add Sales" page, there are features for selecting the products sold, entering the quantity of products sold, and a "Pay" button. The subtotal and total sales will automatically adjust. Once everything is correct, click the "Pay" button, and the system will display the payment page.



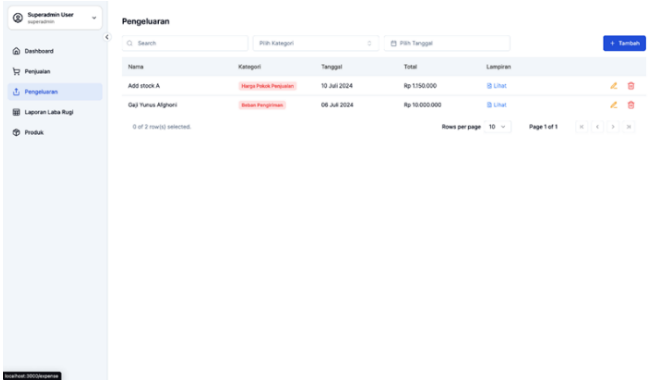
e. Payment Menu

The payment page, fill the amount paid, and it will display how much change should be given to the buyer. Click "Save" to store the transaction in the system. After saving the transaction, the system will automatically display a sales receipt that can be downloaded by clicking the "Download" button.



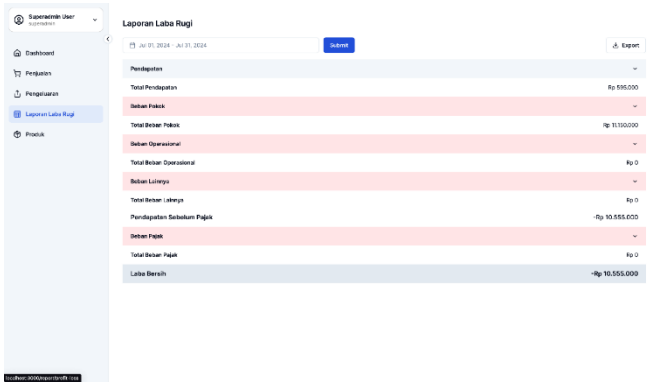
f. Expense Menu

In the expense menu, there are features for searching transactions, selecting transaction categories, choosing specific dates, adding expense transactions, editing recorded expense transactions, and deleting recorded expense transactions. The recorded data includes the transaction name, transaction category, transaction date, total expenses, and attachments for each recorded transaction.



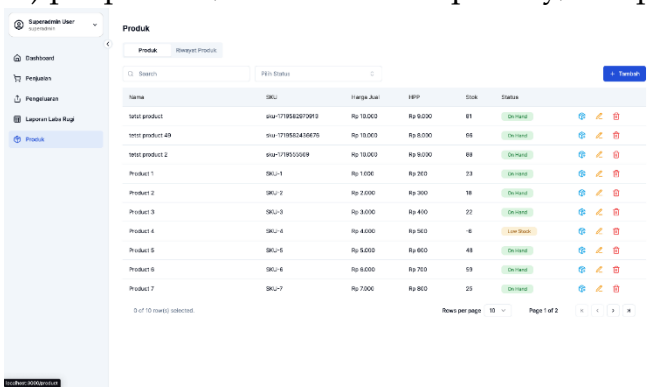
g. Income Statement Menu

In the income statement menu, the system will automatically generate and display the income statement. It will show revenue, cost of goods sold, operating expenses, other expenses, and tax expenses, allowing the net profit of the company to be visible. There are features for selecting the desired date and exporting the report to Excel.



h. Product Menu

In the products menu, there are features for searching products, selecting product status, adding products, editing products, and deleting products. The recorded data includes the product name, SKU, selling price per product, Cost of Goods Sold (COGS) per product, available stock quantity, and product status.



Implementation System on The Object

After the design and development phases have been successfully completed, the next stage is implementation, where the web-based accounting income statement system is applied to the relevant object. Testing needs to be conducted with the Owner and the relevant admins to assess and analyze whether the application is easy to use and can address the issues encountered by the research object. Additionally, the implementation is carried out to ensure that the research object is capable and ready to adopt the system into its business processes, which were previously managed manually. The implementation involves conducting training and socialization with the Owner and admins regarding the system.

Evaluation System

a. Evaluation System by The Users

The evaluation conducted by the users involves distributing questionnaires to the Owner, cashier admin, warehouse admin, and sales admin. This

questionnaire is intended to assess the users' comfort level with operating the system that has been developed. It relates to the system design, language used, and the features available in the system. Based on the results of the questionnaire distribution, a 96.1% approval rate was obtained regarding the system's feasibility. This indicates that users are very satisfied with the system.

b. Evaluation System by IT Expert

At this stage, testing is conducted by IT experts to ensure and determine whether the system functions properly. Several questions were posed to test the feasibility of the system that has been developed. Based on the testing results by IT experts, all menus and interfaces meet the requirements, so the system is deemed ready for use without any revisions.

c. Evaluation System by Subject Matter Expert

At this stage, testing is conducted by subject matter experts to ensure and determine whether the system aligns with current accounting theory. Based on the results of the questionnaire distribution, a 96% approval rate was obtained regarding the system's feasibility. This indicates that, according to the subject matter experts, the developed system is in line with the current developments in accounting information systems.

CONCLUSIONS AND RECOMMENDATIONS

This study aims to improve the accounting information system for the income statement at Toko Amanah Kepanjen to enhance effectiveness and efficiency in business processes. The research focuses on issues within the accounting information system related to the income statement cycle, which requires resolution through various records. The study employs the ADDIE method, which is the best-adopted approach. Based on the evaluation results, it can be stated that the proposed application and business processes are capable of addressing the problems encountered by the research object.

FURTHER STUDY

The limitations of this study, particularly in data collection, are due to the system still being manual. Therefore, it is hoped that future research can develop the system by adding external features, such as displaying product prices and stock for customers, as well as incorporating a chat feature to facilitate interaction between customers and store admins. Additionally, it is anticipated that future research will focus on developing an application that can be used for all types of stores.

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