

## Design and Build a Web-Based Accounting Information System to Optimize Financial Management

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**Abstract:** The web-based Accounting Information System (SIA) is an effective solution in improving the efficiency of recording and managing company finances. This research aims to design and develop a web-based SIA using the Rapid Application Development (RAD) method with the Laravel 8 framework. This system is designed to make it easier to record financial transactions and prepare reports automatically and accurately. The result of this study is a system that is able to produce various financial reports, including income statements, balance sheets, cash flows, capital changes, sales reports, and purchase reports. In addition, this system is also equipped with an automatic sales invoice creation feature after a transaction is made. The system was tested using the black box testing method, which showed that all functions were running according to the user's needs. With the implementation of this system, the financial recording process becomes more efficient, accurate, and accessible. This system can help companies make better financial decisions and improve compliance with applicable accounting standards.

**Keywords:** Accounting Information System, Rapid Application Development, Laravel 8.

### INTRODUCTION

Today's rapid technological developments require companies to be more responsive to the changes that occur (Harefa & Fawwaz, 2024). Advances in information technology allow access to information in a relatively short time and at a more efficient cost (Nababan et al., 2024). Information technology has an important role in helping companies gain a competitive advantage. One of the information that is urgently needed in a short time is accounting information, which covers the entire financial management process in a company (Bintang & Hendra, 2024).

Every company, whether small, medium, or large, needs to manage its finances well to develop a strategic plan for the future (Alifia et al., 2024). Effective financial management also helps in evaluating the company's financial condition, which can be a reference in improvement and decision-making. Accounting Information Systems (SIA)

play a role in identifying accounting problems and improving efficiency and accuracy in financial management (Simarmata & Situmorang, 2023).

The use of accounting systems has been proven to improve data accuracy as well as save time in processing financial information. Small to large companies are now increasingly adopting SIA to support financial recording and management (Putri & Hariyono, 2025). According to the National Standardization Agency (BSN), small companies have a maximum net worth of IDR 200 million (excluding land and buildings) with a minimum turnover of IDR 1 billion per year. Medium companies have a maximum net worth of IDR 10 billion with a turnover of between IDR 1 billion to IDR 10 billion per year, while large companies have a turnover of more than IDR 50 billion per year.

SIA is the main need for companies to manage their finances. A study shows that 97% of small companies in New Zealand (with fewer than 19 employees) have used SIA for day-to-day financial records. The use of SIA in small companies aims to prepare a more structured financial system as their business grows.

In every stage of the project run by the company in the field of technology and information, financial records are indispensable to ensure transparency and efficiency in the company's financial management. For example, at the bidding stage, it is necessary to record the price that has been agreed with the client. During the development process, recording daily or monthly expenses is essential to control production costs. Meanwhile, at the payment stage, it is necessary to record fund income per term to ensure that the company's cash flow remains stable. In addition, companies also need to record unexpected income and expenses as well as daily operational expenses.

Based on these needs, the development of a web-based Accounting Information System is the right solution for companies to manage their finances more accurately, efficiently, and well-documented. This system will help in more transparent financial records, so that it can support the company's growth and sustainability in the future.

## **THEORETICAL REVIEW**

### **Accounting Information System (SIA)**

Accounting Information System (SIA) is a system used to collect, record, store, and process financial and accounting data to produce relevant information for company decision-making (Saputri et al., 2023). SIA plays a role in improving efficiency and accuracy in recording financial transactions, as well as enabling companies to have more transparent and accurate financial data.

According to (Zahara & Firdaus, 2024) There are several main components in the Accounting Information System (SIA) that support the smooth management of financial management in the company. The first component is People, i.e. individuals who interact with the system, including accountants, managers, and other users who are responsible for managing financial data. Furthermore, Procedures and Instructions serve as methods used in the collection, recording, and processing of financial data to ensure the accuracy of the information produced. Data is also an important component, because it is financial information used to produce business reports and analysis to support decision-making. In addition, the Software is used as a tool to process financial data automatically, so that it can increase efficiency and accuracy in recording transactions. Technology Infrastructure

includes hardware, networks, and other supporting technologies that allow systems to operate properly and be accessed optimally. Finally, Internal Control functions to maintain data security and prevent errors or fraud in financial records, so that the information produced remains accurate and trustworthy.

### **Information Technology in Accounting**

Information technology plays a crucial role in modern accounting systems, especially in improving the efficiency and effectiveness of financial records. With a web-based system, companies can access data in real-time and reduce the potential for human error in recording transactions (Ramadan & Veri, 2025).

The use of information technology in accounting provides various significant benefits for companies in managing financial data. One of the main benefits is the automation of the accounting process, which can reduce the manual workload of recording transactions as well as speed up the process of creating financial reports. In addition, information technology also contributes to improving data accuracy, by reducing the possibility of errors in the calculation and recording of financial transactions, so that the information produced is more reliable. Another advantage is the ease of data access, where the web-based system allows data to be accessed anytime and from anywhere, thereby speeding up the decision-making process. In terms of security, information technology also supports better data security by implementing encryption and user authentication to protect financial information from unauthorized access. According to him, the implementation of web-based systems in accounting has been widely applied by small, medium, and large companies to increase productivity and efficiency in financial management (Faida, 2025).

### **The Role of Accounting Information Systems for Companies**

Accounting Information Systems are not only used for recording transactions, but also to support strategic decision-making within the company. According to (Revira & Firdaus, 2024), Accounting Information System (SIA) provides various benefits for companies in managing finances more effectively and efficiently. One of the main benefits is improving operational efficiency, where the automation of transaction recording allows companies to reduce the time and operational costs incurred. In addition, SIA also plays a role in making decision-making easier, because the resulting financial statements can be used as a basis in formulating a more appropriate business strategy. In terms of compliance, SIA assists companies in improving regulatory compliance, by ensuring that financial reporting is in accordance with the requirements set by the government and applicable accounting standards. Furthermore, SIA also contributes to reducing the risk of errors and fraud, as the existence of better internal controls allows companies to minimize recording errors and prevent potential fraudulent acts in financial management.

### **Implementation of Web-Based Accounting Information System**

The use of web-based systems in accounting is growing in popularity because it provides more flexibility in financial management. This system allows real-time data

access, integration with other systems, and faster and more efficient data processing (Hadian et al., 2023).

In the implementation of a web-based Accounting Information System (SIA), there are several important factors that need to be considered so that the system can function optimally. One of the main factors is data security, where protection against unauthorized access and the implementation of data encryption are important steps to prevent financial information leakage. In addition, ease of use is also a crucial aspect, with a user-friendly interface design so that it can be easily accessed and used by various parties in the company. Another factor is the scalability of the system, which is the ability of the system to grow along with the company's business growth, so that it can still handle the increase in the amount of data and transactions without experiencing disruption. Finally, integration with other systems also needs to be considered, so that SIA can interact with other supporting systems such as inventory management, payroll, and banking systems, thus ensuring a more efficient and accurate data flow within the company.

## **METHODS**

In the development of this accounting information system, the Rapid Application Development (RAD) method is used as the main approach because it allows a faster development cycle than traditional methods. RAD is also suitable for projects with a limited scope that can be worked on by small teams and makes it easier to adjust to the needs of systems and business processes. This method consists of several main stages, namely:

### **Requirement Planning Phase**

At this stage, problems in the process of recording income and expenses are identified that cause delays in making financial statements. This analysis aims to determine the needs of the system to be developed so that the solutions applied can be in accordance with the existing problems.

### **RAD Design Workshop Phase**

In this phase, a new system is designed which is expected to overcome obstacles in business processes. The design was carried out with an Object-Oriented approach using Unified Modeling Language (UML). In the system design stage, several main designs are carried out to ensure that the system runs as needed. Process design is done by creating a use case diagram that illustrates the tasks in the system as well as the actors involved. Furthermore, the database design is prepared by determining the schema and specifications of the database to be used in the system. To ensure that the system is easy to use, the interface design (UI) is made with a user-friendly appearance, so that users can interact with the accounting information system efficiently. In addition, system diagram design is also developed by arranging class diagrams and sequence diagrams to illustrate the relationships between classes, interactions in the system, and the sequence of operations that occur.

**Implementation Phase**

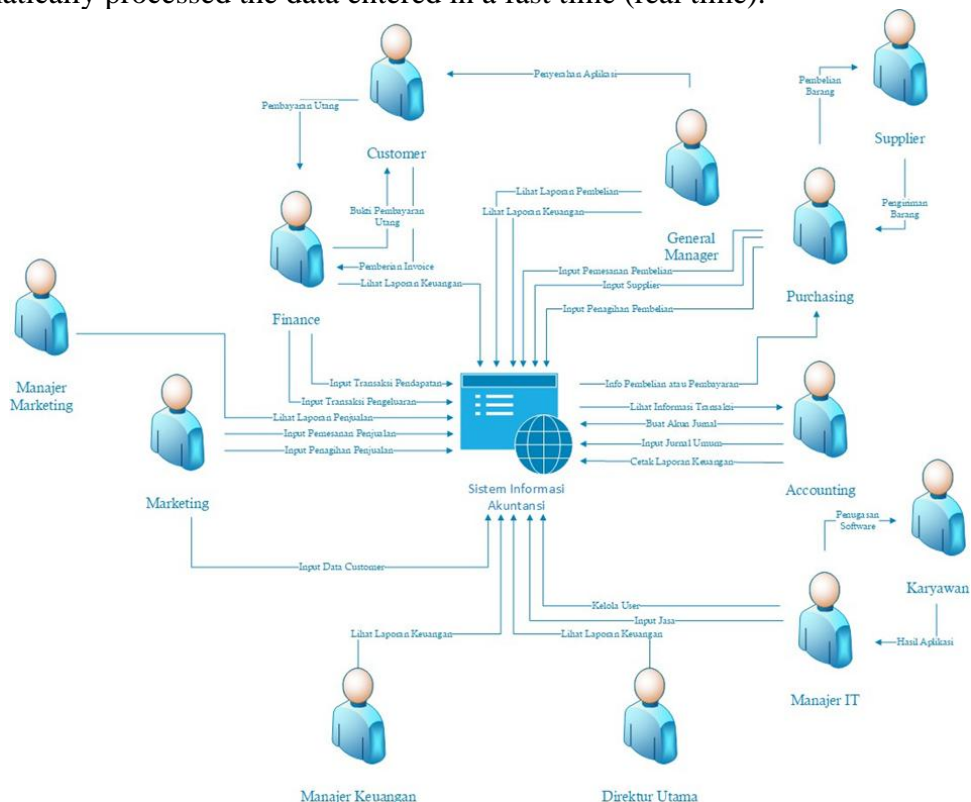
At this stage, the system that has been designed begins to be developed through several main processes. Coding is done using the Laravel version 7 framework, where the front-end is developed using Laravel Blade and HTML, while the back-end uses PHP. In addition, SCSS is used to improve the appearance of the interface. After the coding process is complete, testing is carried out using the black box testing method, which focuses on testing system functions based on predetermined parameters. This test aims to ensure that every feature in the system has functioned properly according to the user's needs.

**RESULTS**

**Needs Planning Phase**

**Proposal System**

This proposed system can speed up the process of making financial reports because the system is centralized to the application of the Accounting Information System, and the data used in financial reports is factual data because the system has automatically processed the data entered in a fast time (real time).



**Figure 1.** Proposal System

## DISCUSSION

### Implementation Phase

In this stage, all the design and user interface that is created are applied using a programming language to become a usable system. Some of the tools used to create an accounting information system are:

**Table 1.** Tools List

It	Tools	Uses
1	Microsoft Visio	Designing UML.
2	Laravel	Framework used for create a web-based Accounting Information System .
3	PostgreSQL	Database used to create Accounting Information System web-based .
4	Adminer	Applications used to view databases from System applications Accounting Information.
5	Visual Studio Code	<i>Code editor</i> to create apps Accounting Information Systems.
6	Microsoft Edge	<i>The browser used in the application creation process.</i>
7	XAMPP	<i>The server used to be able to run applications and interact with the database</i>

The web-based Accounting Information System (SIA) developed in this study aims to improve efficiency and accuracy in recording financial transactions. The implementation of the Rapid Application Development (RAD) method allows the acceleration of the system development cycle with an iterative approach, so that the system can be more flexible in adjusting to user needs. The Laravel 8 framework is used as the main technology in system development, because it has advantages in database management, security, and efficiency in managing financial data.

In testing using the black box testing method, this system successfully meets the functional needs of users. This test shows that the system is able to generate financial statements automatically, including income statements, balance sheets, cash flows, capital changes, and sales and purchase reports. In addition, the automatic sales invoice creation feature makes it easier for users to manage transactions.

Compared to manual recording systems using spreadsheets, this web-based SIA implementation provides increased efficiency in financial data processing. The system also strengthens the security aspect with user authentication as well as data encryption, which reduces the risk of errors and fraud. With this system, companies can improve compliance with accounting standards and support more accurate and real-time data-based financial decision-making.

## CONCLUSION

This research resulted in a web-based Accounting Information System developed using the Rapid Application Development method and built with the Laravel 8 framework. This system is designed to help the process of recording and reporting financial more efficiently, so that it can make it easier to manage financial data in a company. The outputs produced by this system include various financial reports, such as

income statements, balance sheets, cash flows, capital changes, sales reports, and purchase reports. In addition, this system is also equipped with a feature to automatically create sales invoices after transactions are made, so that it can increase accuracy and speed in financial management.

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