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Recording application with managerial prediction features for skenoo business

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Abstract. Recording information on sales and purchases transactions is a part that cannot be separated from business activities. This information should be recorded and stored as historical financial information. Recording a historical financial information is critical for all business sizes. Skenoo is a family business that is engaged in the automotive sector as a distributor and final seller of motorcycle tires. Currently, Skenoo business is growing by selling motorcycle spare parts, selling car tires, and other automotive needs.

To face this development, keeping a good record is an important thing to achieve its business objectives. The increased stock of goods requires careful logging to produce good accounting and management reports. This study discusses the design system for accounting recording on Skenoo business that supports accounting managerial and prediction on the stock of goods calculation that is useful for decision making, which at the time of this study is written, still done manually. The results of this study provide convenience in recording inventory Skenoo goods based on sales and purchase transactions. The financial statements, which has never created before, can be created automatically.

1. Introduction

Skenoo is a tire shop in Semarang, located in the middle of citizen that mostly using a motorbike. Skenoo can be categorized as Small Enterprise, which established for about two years ago with annual revenue in the range of 300 million to 2 billion Indonesian Rupiah (IDR) [1]. As for the current system, Skenoo manages its accounting recording using Microsoft Excel (later called Excel) application. There are some problems in using Excel, which becomes a minus point in business effectiveness. The accountant must record the nominal price of the goods and since the accountant knowledge of using Excel is limited, the recapitulation of goods for every invoice is done manually. It may lead to the human-error occurrence which causes the difference in accounting records and financial reports.

Skenoo needs information management for decision making, especially in managing goods stock to cope with the growth of its business, which monthly average growth of sales up to 15%. Business predictions regarding the number of goods sold for each item that might occur in the future period of the current business situation are also important factors in decision making. Skenoo also wants to expand its business area by utilizing the internet which is expected to reach potential buyers in a wider area and provide convenience in the process of transferring accounting information to be more actual. Some



accounting process done by Skenoo are recording asset book, pre-operating expense (POE) book, selling and buying transaction book, inventory book, general journal and cash journal.

Accounting Information System (AIS) can be defined as a computerized system which used to help organizations managing their accounting data and generating financial reports for decision making and forecasting purposes [2]. Moreover, the organization can increase its competitiveness by adopting and implementing AIS. The significance impact of implementing AIS, especially in Small and Medium Enterprises (SMEs) has been studied through some research, and the relationship between implementing AIS and the increasing performance of SMEs in doing its business is positive [3][4][5].

Thus, this research aims to develop a web-based accounting information system for Skenoo, to help Skenoo in increasing the efficiency of accounting data recording, increasing the quality of decision making, and adding the security of information.

2. Research Methodology

2.1. Data Collecting Method

Data collection performed with document study and interviewing the end user. In this case, document study and some interviews were performed to learn the as-is system [6].

2.2. System Development Method

System development method used in this research is based on Rapid Application Development (RAD) with phased method [7].

2.3. Unified Modelling Language (UML)

According to Tegarden [7], UML is a standard set of diagramming techniques which provide general notation of object-oriented development and modeling system development project from the analysis phase to implementation phase.

2.4. Accounting Information System (AIS)

AIS is a study of the flow of accounting records in one period. A good recording flow can reduce the risk of fraud and the possibility of errors in the accounting process of a business. In some accounting principle textbooks, AIS is described as an activity to collect and processing transaction data and connecting financial information to the decision makers [8].

2.5. Forecasting or Prediction

Forecasting is an activity to forecast things about events based on the results of rational calculations or the accuracy of data analysis [3]. In a business, predictions mostly used to see the possibility of sales.

Moving average method is a method that uses the average value of the data value in time series as a prediction for the next period [11]. Moving average formula for a time series (k) [9]:

$$F_{t+1} = \frac{\sum(\text{most recent } k \text{ data values})}{k} = \frac{Y_t + Y_{t-1} + \dots + Y_{t-k+1}}{k}$$

Explanation:

F_{t+1} = Prediction time series from a period $t + 1$

F_{t+1} = Actual time series from a period t

2.6. Managerial Accounting

Managerial Accounting is a study about calculation including accounting information management that will provide information on steps taken in business for three things [10]: a) Planning, b) Control, and c) Decision Making.

Inventory Turnover Management can be calculated using the following formula:

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Explanation:

Cost of Goods Sold = buying price of an inventory

Average Inventory = average value of inventory

Inventory turnover ratio formula needs the Cost of Goods Sold (COGS) and inventory average of a product. COGS value can get by calculating the quantity sold times its buying price. Inventory average value can be get using the following formula:

$$\text{Average Inventory} = \frac{(\text{Beginning Inventory} + \text{Ending Inventory})}{2}$$

Explanation:

Beginning Inventory = inventory value at the beginning of period.

Ending Inventory = inventory value at the end of period.

The following formula used to calculate inventory turnover in days:

$$\text{Turnover in Days} = \frac{365}{\text{Inventory Turnover Ratio}}$$

3. Results and Discussion

3.1. User Requirements

The functional requirements of the target system are:

- 1) All user can see the business profile and various item sold through the front-end. User who registered as 'admin' can access the back-end.
- 2) User can enter the system using a security key to be able to do:
 - a) View accounting information.
 - b) Enter accounting information.
 - c) See the result of managerial calculation for stock decision making.
- 3) Record the purchases and sales transaction of merchandise inventory.
- 4) Recording a receivable.
- 5) Displays recorded merchandise based on purchases and sales.
- 6) Display financial reports on monthly and yearly basis.
- 7) Perform managerial calculation to help decision making using managerial accounting theory including:
 - a) Looking for the lowest purchase price with the supplier or store name.
 - b) Finding out how fast is an item sold by looking at its turnover ratio.
 - c) Forecasting sales of goods in the following month with average method.

The design of the proposed functional system model is as follows:

- 1) Showing Skenoo profiles.
 - 1.1. Skenoo business profile
 - 1.2. Skenoo location information
 - 1.3. Product information sold by Skenoo
- 2) Log in for admin and registered users.
- 3) Enter accounting information.
 - 3.1. Enter a purchase invoice.
 - 3.2. Enter a sales invoice.
 - 3.3. Enter the recording of expense and income into the cash book.
 - 3.4. Enter a fixed asset and its depreciation machine.
- 4) Conduct a renewal of stock information.
 - 4.1. Add stock of goods/merchandise.
 - 4.2. Reduce stock of goods/merchandise.
 - 4.3. Change the price of a merchandise according to the last purchase price.

- 4.4. Record the difference of changing the price from purchase transaction price of a merchandise to COGS.
- 5) Make manual and annual financial report.
 - 5.1. Make an income statement (including tax calculation).
 - 5.2. Make a balance sheet report.
- 6) See all available accounting information.
- 7) See forecast result of accounting information.
- 8) See the result of accounting information management.
 - 8.1. Looking for suppliers that supply the lowest prices.
 - 8.2. Looking for the goods that have a fast turnover for each type especially for tires type.
- 9) Planning an income, cost, and profits.
- 10) Export accounting information to excel file.
- 11) Admin can import the accounting information from excel file with the specified format.

3.2. Data Management Layer Design

The design of the data management layer depicted in the Entity Relationship Diagram (Figure 1).

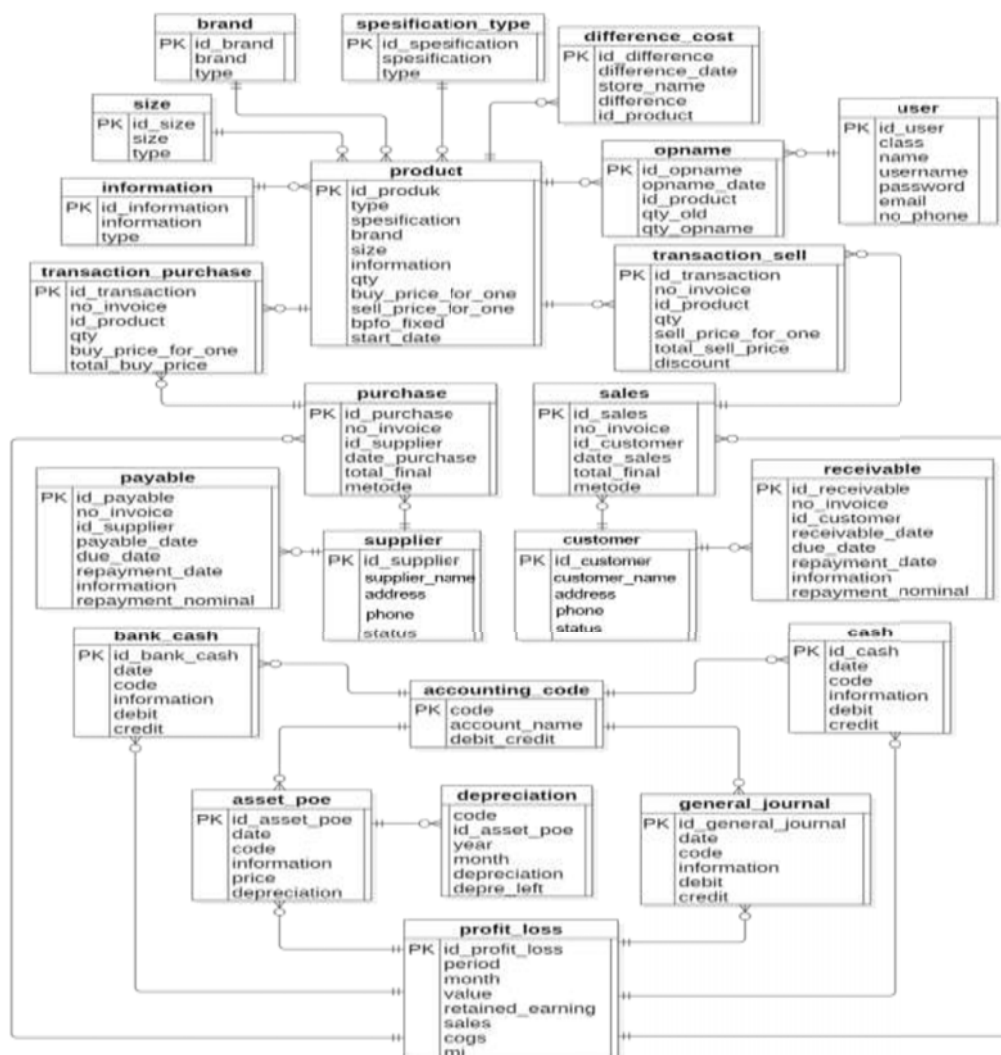


Figure 1. Entity Relationship Diagram

3.3. Interface Design

Some interfaces for the proposed front-end application are as follows:

- 1) Home Pages
- 2) Product Pages

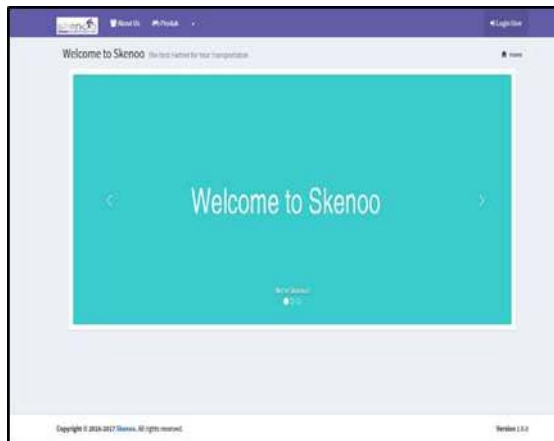


Figure 2. The View of Skenoo Home Page

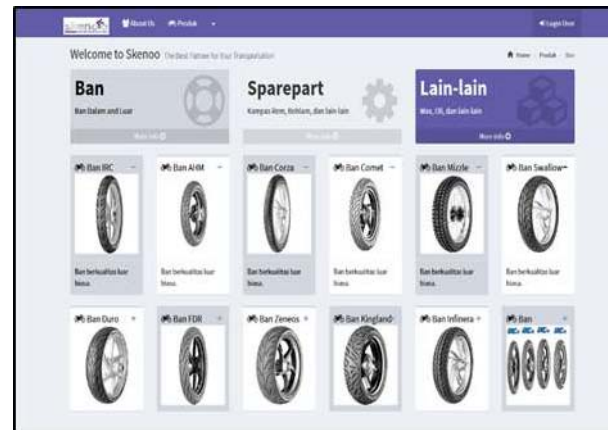


Figure 3. The View of Product Page

Some interfaces for the proposed back-end application are as follows:

- 1) Home Page of *Back-end*

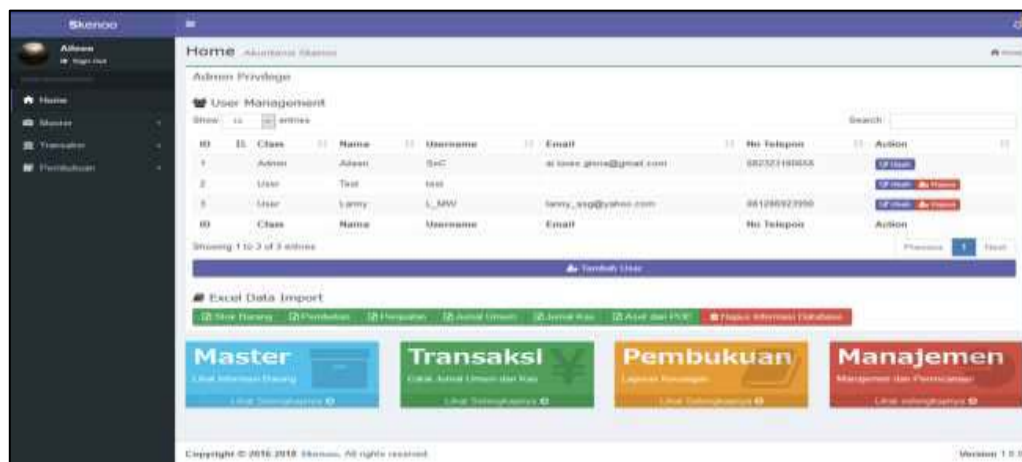


Figure 4. The View of Admin Home Page

4. Conclusion

This application helps accountants manage accounting information and process information to produce financial reports, predictions, and managerial support for decision making. In addition to that, this system is secured with a session in its authentication mechanism. With the online use of the programs, potential buyers can view Skenoo information via the Internet which leads to business expansion for Skenoo.

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