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Local Wisdom of Micro, Small and Medium Enterprises Electronic Finance

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Abstract. The availability of electronic financial applications circulating in the community can help improve the management of micro, small and medium business entrepreneurs towards the era of industrial revolution 4.0. The lack of available funds, knowledge, availability and reliability of information systems is an obstacle for small and medium enterprises around Jenderal Soedirman University. Based on this phenomenon, this study targets the establishment of electronic financial applications that have local wisdom. This research method uses a software engineering paradigm. Process models for software engineering are selected based on the nature of applications and projects, methods and tools used, controls and delivery needed. The results of the study show that small and medium micro enterprises around Jenderal Soedirman University are in dire need of electronic financial applications related to warehouses, cashiers, and managers.

Keyword: 1 Micro · 2 Small and Medium Enterprises · 3 Electronic Finance · 4 Local Wisdom

1. INTRODUCTION

The electronic financial system that is widely circulating in the community can help small and medium entrepreneurs to improve their business performance in the era of industrial revolution 4.0. The era of the Industrial Revolution 4.0 requires micro, small and medium entrepreneurs to be able to understand and use the digitization system. One important form of digitalization is the electronic financial system. There are a lot of electronic financial systems offered to the public, some are even paid and some are free. The diversity of features offered on paid systems will help micro, small and medium entrepreneurs improve their business performance compared to the free ones. In fact, micro, small and medium entrepreneurs around the University of General Sudirman do not have enough money to use an electronic financial system that is really needed. As a result, there are still very few micro, small and medium entrepreneurs around the University of Jenderal Sudirman who use electronic financial systems.

Micro, small and medium entrepreneurs who have used the electronic financial system are also still constrained by the availability and reliability of information systems. The availability of applications offered is still questionable in its reliability in helping micro, small and medium entrepreneurs to manage their business from a financial perspective. Based on this phenomenon, this study targets the establishment of an electronic financial system that can answer the needs of micro, small and medium entrepreneurs in accordance with local wisdom.

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2. MATERIAL AND METHODS

2.1 Material

2.1.1 Micro, Small, and Medium Enterprises

Micro, Small, and Medium Enterprises are individual businesses or entities that are categorized in accordance with UU No 20 Tahun 2008 as follows: 1) Micro is productive businesses owned by individuals and or individual business entities that have assets of less than or equal to fifty million rupiah and annual sales of less than three hundred million rupiah, 2) Small is productive economic businesses that are independent, carried out by individuals or business entities that are not subsidiaries or not branches of companies that are owned, controlled or become a direct or indirect part of a medium-sized business or large business that has assets of more than fifty million rupiah to five hundred million rupiah (excluding land and building of business premises); or have annual sales of more than three hundred million rupiah to two billion five hundred million rupiah, 3) Medium is productive economic enterprise that is independent, carried out by individuals or business entities that are not subsidiaries or branches of companies that are owned, controlled, or become part of either directly or indirectly with small businesses or large businesses that have assets above five hundred million rupiah to ten billion rupiah (excluding land and buildings of business premises) or having annual sales of over two billion five hundred million rupiah to fifty billion rupiah.

2.1.2 Financial Statements of Micro, Small and Medium Enterprises

The financial report is a record of a company's financial information in an accounting period that can be used to describe the company's performance (SAK, 2009). According to Rosdiani (2011) states the quality of financial statements is the extent to which the financial statements presented show true and honest information. Quality financial statements are useful as a basis for making economic decisions for interested parties. The quality of financial reports in this study is seen from the extent of the completeness of financial records prepared by Micro, Small and Medium Enterprises to form financial statements, discipline in recording each transaction, components of financial statements and accounting standards used. Financial reporting quality can be measured by several indicators, namely: 1) Benefits of the financial statements produced, 2) Timeliness of financial reporting, 3) completeness of information presented, 4) Honest presentation, 5) contents of financial reports can be verified, 6) The contents of financial statements can be compared, 7) Accuracy and clarity of the information presented. This is in accordance with the elements contained in the four qualitative normative preconditions of financial statements, including: relevant, reliable, comparable and understandable (PP 71 Tahun 2010).

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2.2 Method

Purposive sampling was used in obtaining samples of micro, small and medium enterprises around the General Sudirman University. Sugiyono (2016: 85), purposive sampling is a technique of sampling data sources with certain considerations. According to Roger S. Pressman, Ph.D (2002: 39) in solving software engineering problems must combine development strategies that cover layers of processes, methods, and tools. This strategy is often referred to as a software engineering process or paradigm model. The process model for software engineering is chosen based on the nature of the application and the project, the methods and tools used, and the control and delivery needed. Each model has its own characteristics.

- Prototype Model

  According to Abdul Kadir (2002: 416) prototype is a method in developing a system that uses an approach to make a program quickly and gradually so that it can immediately be evaluated by the user. The prototype makes the information system development process faster and easier, especially in situations where user needs are difficult to identify.
- Prototype Goals

  Broadly speaking, the prototype targets are as follows (Lucas, 2000): 1) Reduce time before the user sees something concrete from the system development effort, 2) Provides fast feedback from users to developers, 3) Helps describe user needs with fewer errors, 4) Improve the understanding of development and users of the goals that should be achieved by the system, 5) Making user engagement very meaningful in system analysis and design.
- The Stages of Prototype

  The stages of the prototype method are as follows: 1) Identifying User Needs.Users and developers together define the format of all software, identify all needs, and outline the system that will be created; 2) Make a prototype. After the system requirements were obtained, the developer began to make a prototype; 3) Test the Prototype. Testing is carried out by the user whether the prototype made is in accordance with the wishes of the customer, 4) Repair the Prototype. The developer modifies according to user input; 5) Developing a Production Version. The developer completes the system according to the last input from the user.

3 RESULT

3.1 Needs Analysis

3.1.1 User Requirement

Users of financial information systems are Customers, Cashiers, Managers, Inviting Staff, and Owners. Based on the results of the needs analysis, customers need to be able to make purchase transactions and can receive proof of purchase and payment transactions; cashiers need to be

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able to service system-purchase transactions, manage products and view daily sales reports; managers need to be able to manage product data, monitor stock and transactions that occur, and can make sales reports and financial statements; warehouse staff need to be able to enter and view data on procurement of goods in the warehouse, make reports on the procurement of goods at the warehouse; the owner needs to be able to see the procurement reports, sales reports, financial reports, and can manage all employees including staff, managers and cashiers.

3.1.2 System Requirements

Based on the analysis of user needs, the necessary system requirements are needed to be able to produce a good system and in accordance with the required business processes. The following system requirements are applied based on user needs.

3.1.2.1 Functional Requirements

Functional requirements are system requirements that are arranged in detail containing what processes will be carried out by the system. In this study, functional requirements are arranged based on user needs. Functional requirements to be implemented are systems that can provide functions for Purchase Transactions, the system can make Sales and Financial Reports, and the system can monitor Warehouse Stock.

3.1.2.2 Non-functional requirements

Non-functional requirements are system requirements that describe the behavior possessed by the system. These requirements include systems that can be accessed offline or online, the system can be accessed using web browser software, the system has an easy-to-understand interface and the system can be run on a computer (PC), tablet or smartphone to facilitate daily transaction activities.

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3.3 Financial Information System Design

3.3.1 Rich Picture

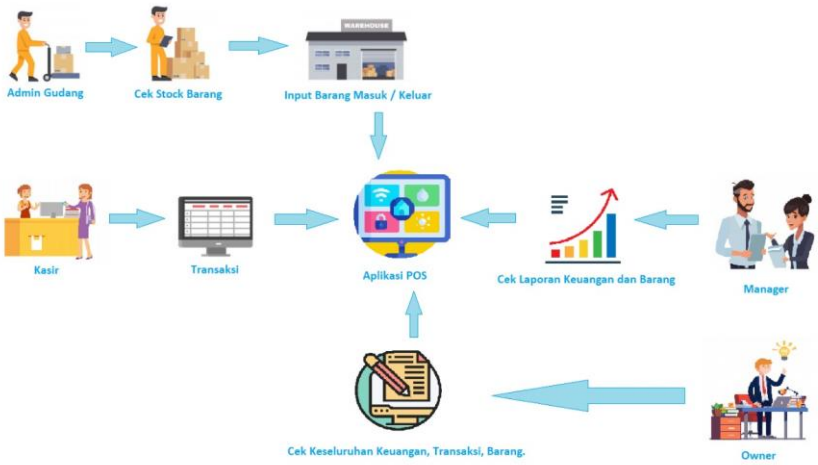

Figure 1. Rich Picture of Financial Information System

Rich picture is one way that can be used to describe a particular situation. In Figure 1 there is a rich picture of a financial information system that explains the business processes for each user. Warehouse Staff can check and enter data on incoming and outgoing items. The cashier can transact with customers using the system. The manager can view financial statements and items contained in the system. The owner can see the entire financial transaction and the flow of goods.

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3.3.2 Data Flow Diagram (DFD)

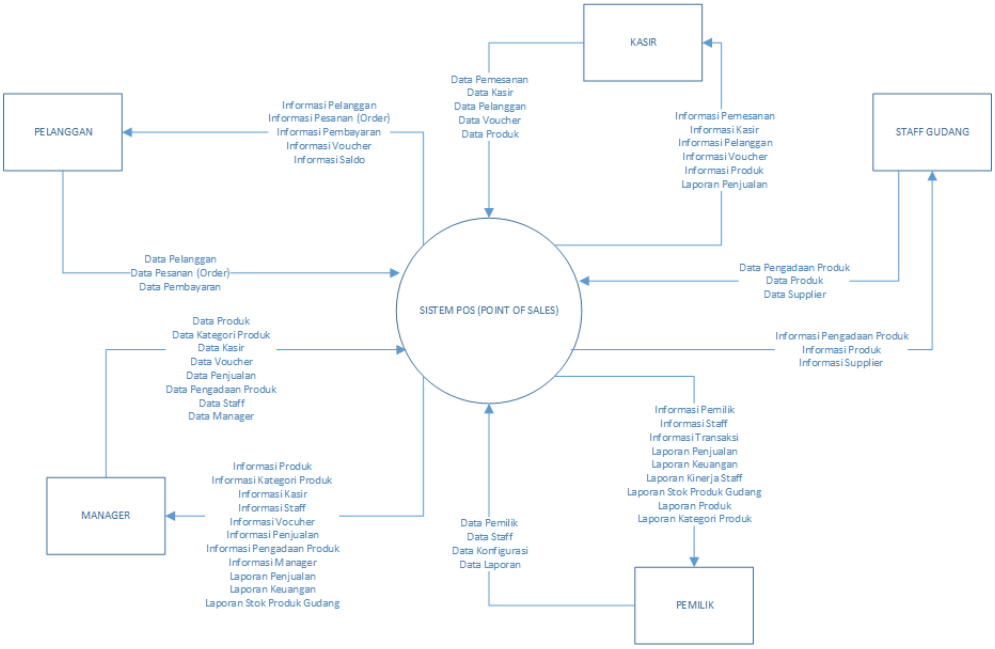

Figure 2. *Context Diagram*

Context diagram is a diagram consisting of a process and describes the scope of a system. In Figure 2 it is explained that the system has five users consisting of owners, managers, warehouse staff, cashiers, and customers. Each user shows the main data streams to the system and from the system. Data entered into the system will produce information according to the level of the user.

3.3.3 Entity Relationship Diagram (ERD)

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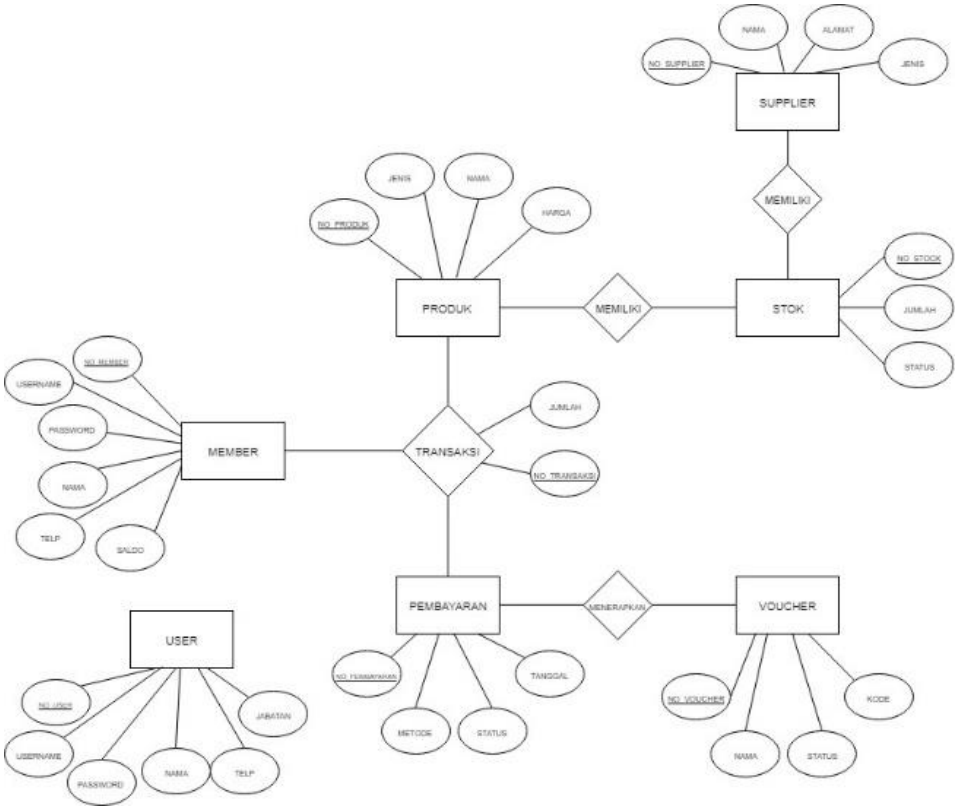

Figure 3. Entity Relationship Diagram

Entity Relationship Diagram is a model to explain the relationship between data in a database based on basic data objects that have relationships between relations. In figure 3 there are 7 entities consisting of products, members, users, payments, vouchers, stocks, and suppliers. Which each entity has various attributes.

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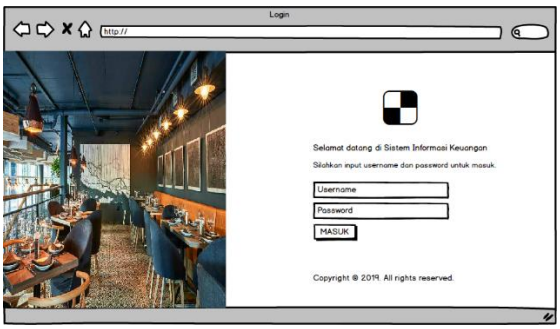
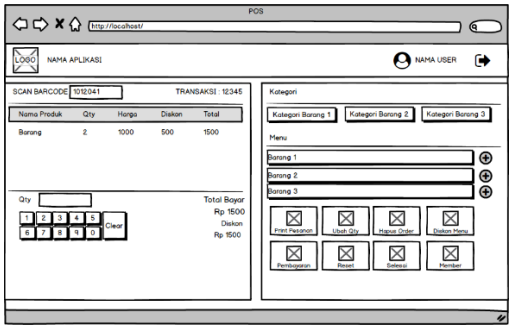
3.3.5 Mockup



Gambar 4. Login



Gambar 5. POS

In figure 4 is the Login mockup, where the user first enters the system using a username and password. In figure 5 is the display of POS or cashier, there is an input menu item on the right and the details of the purchase or transaction on the left, items can be inputted using a barcode scan. The functions in the cash register system are on the bottom right under the items menu.

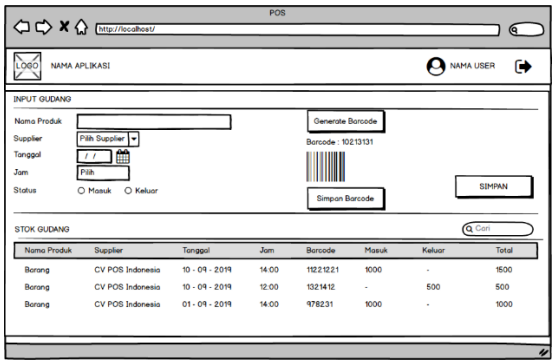


Figure 6. Warehouse

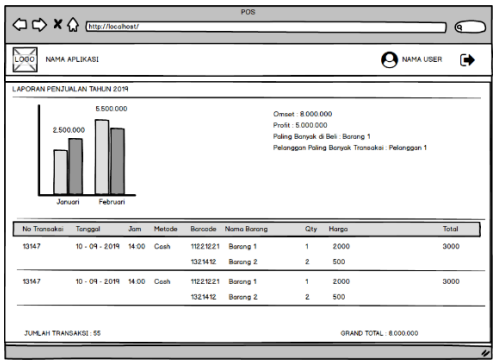


Figure 7. Manager Report

In Figure 6, there are information on the input of goods to the warehouse accompanied by the function of creating and storing barcode images, warehouse transaction reports to check items out and in. In figure 7 there is an annual sales report that displays a bar graph of the development of sales per month, turnover per year, profit per year, the most purchased items and the most customers making purchase transactions.

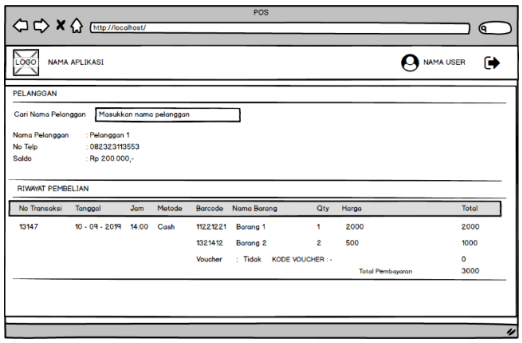


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Figure 8. Customer

In figure 8 there is a customer information display that contains complete customer information in the form of customer names, telephone numbers and balances. There is also purchase history information for these customers.

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