International Journal of Research and Applied Technology

4(1)(2024) 60-67

Journal homepage: https://ojs.unikom.ac.id/index.php/injuratech

Designing Information Systems for Small and Medium Enterprises Based on Application

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Abstract. Small and medium enterprises are a major factor in playing a role in the era of globalization to advance the country's economy. On the other hand, there are still many small and medium enterprises that still apply information systems manually, which is an obstacle in the world of business competition. Therefore, the need for a transaction application that facilitates sales activities, which are still manually digital. So the purpose of this study is to design transaction applications for small and medium enterprises with the latest information systems. To support this research, researchers used a descriptive method approach with a practical and applicable approach by collecting data using literature studies and developing information systems using a prototype method with an object-based approach. The results show that this design has an impact on changes in business performance. because in this application provides the latest features and is easy to operate by small and medium businesses. Some of the features include: Login Menu, Main Menu, Item Menu and Sales Menu. Basically, with some far better benefits provided, many small business operators are reluctant to use them for reasons related to equipment costs. It can be concluded that in designing an application well, the resulting application will run well. This application is useful for reducing the occurrence of small errors in transactions.

Keyword: Application, Information System, SMEs.

1. Introduction

In this era of globalization, of course, the rapid advancement of information technology systems can have a major impact on a company [1]. Small and medium enterprises are the main factors in playing a role in advancing the country's economy. On the other hand, there are still many small and medium enterprises that still implement information systems manually, which becomes an obstacle in the world of business competition [2].

Effendi, Saepullah, and Rismaya have done about Web-Based Sales Information System Design in Small and Medium Enterprises. They the ability of information systems can add new

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opportunities or opportunities for SMEs to expand their market share at affordable costs [3]. Ferry Sulianta, Ai Rosita, Ulil Surtia Zulpratita, Heri Heryono, Eka Angga Laksana, Sy. Yuliani has done research on different kinds of modern techniques to develop various information systems. They say that in the design of information systems requires a new technique to develop information systems. With the end result the information system can run well without any obstacles [4]. Eka Putri Apriliani and Indra Ranggadara have conducted research on Analysis and Design of Korea Merchandise Sales System (Case Study in Sueweetiesid). They say that simple business processes created and information system design can provide speeds of service for a business [5]. Nur Hidayati has done research on Using The Model View Controller (MVC) Method In Medicament Sales Information System Design. She said The power of opportunity in the speed of service can be done quickly, because the business process is very simple and the system design is done because of the number of reservations by members [6]. Yulianto and Fauzi have conducted research on Design of Web-based Online Sales Information System. They say This research also provides real-time stock information, such as stock availability of goods to the sales report [7]. Saima Khan, Shaiza Khan, Mohsina Aftah has conducted research on Digitization and its impact on economy. They say although digitization is a very time consuming effort and the cost is not small, but it is one of the alternatives to overcome a problem in a business [8].

Therefore, the purpose of this research, the researchers will design an application-based sales information system to help small and medium businesses run their businesses. To support the research, researchers used descriptive qualitative approach method of collecting data using library studies and development using the prototype method.

2. Method

In a process of writing scientific papers, it is necessary to have a research method that is useful for achieving goals and obtaining accurate and reliable information required by the author to carry out several stages in research. In this study the authors used a descriptive method with a practical and applicable approach. This research does not prioritize the size of a population, if the data collected is in-depth and can explain the phenomenon under study, there is no need to look for other sampling. For data collection, researchers used literature study to assist this research. The first stage is to analyze and identify all needs related to the features and content required. After that, make information system designs. Application-Based Information System for Small and Medium Enterprises is built using an object-oriented approach, with system development using the prototype method.

The stages of research that will be carried out in developing this Application-Based Information System for Small and Medium Enterprises can be seen in Figure 1 as follows:

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4(1)(2024) 60-67

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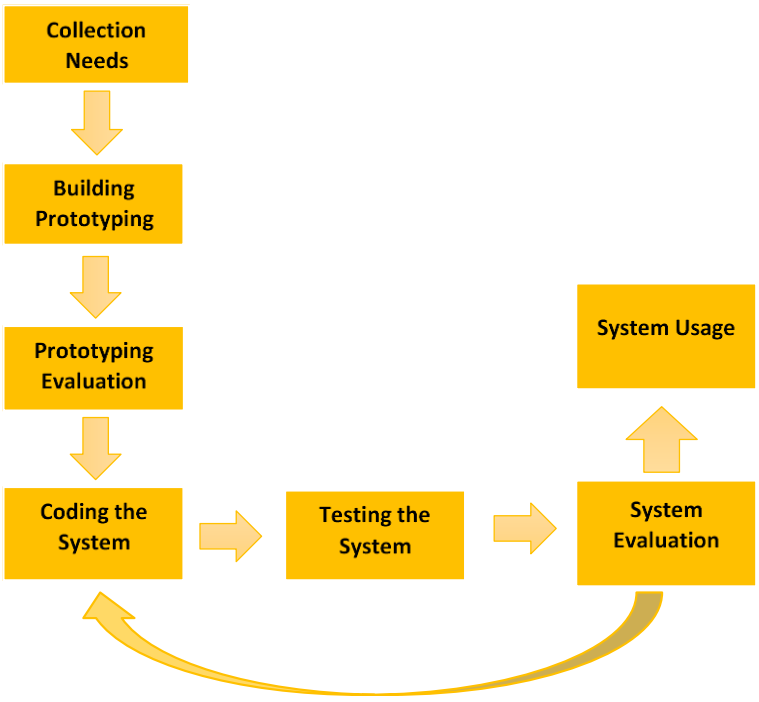

Figure 1. Research Stages.

Explanation of each stage can be summarized as follows [9]:

- Collection Needs
  Customers and developers together define the format and needs of the entire software, identify all the needs, and outline the system to be created.
- Building Prototyping
  Build prototyping by creating a temporary design that focuses on presenting to customers (e.g. by creating inputs and output examples).
- Prototyping Evaluation
  This evaluation is done by the customer, whether the prototyping that has been built is in accordance with the customer's wishes. If it is appropriate, then the fourth step will be taken. Otherwise, then prototyping is fixed by repeating steps 1, 2, and 3.
- Coding The System
  In this stage the agreed prototyping is translated into the appropriate programming language.
- Testing The System
  Once the system has become a ready-made software, it must be tested before use. This test is done with White Box, Black Box, Base Path, architectural testing and others.
- System Evaluation
  The customer evaluates whether the finished system is as expected. If so, then the seventh step is done, if not, then repeat steps 4 and 5.
- System Usage
  Software that customers have tested and received is ready for use.

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3. Results and Discussion

Based on the reference research attempted in the creation of this design, the first step is to carry out analysis and identification of all the needs that are linked to the features after the required content [10].

3.1. System Requirements Analysis

One of the most important tasks in the system development phase is to determine the starting point of the problem, the opportunities and commands that trigger the system development. [11]. To build an application-based information system, of course, requires the Unified Modeling Language as a visual language that combines graphical notation with formal language for object-based systems [12]. In modeling such as use case diagrams, many are used to model system behavior and also to represent user interactions with the system [13].

The results of the needs analysis for Application-Based Information Systems for Small and Medium Enterprises are illustrated through a use case to see who are the actors involved in the system, as well as what functions the system can perform, can be seen in Figure 2 below:

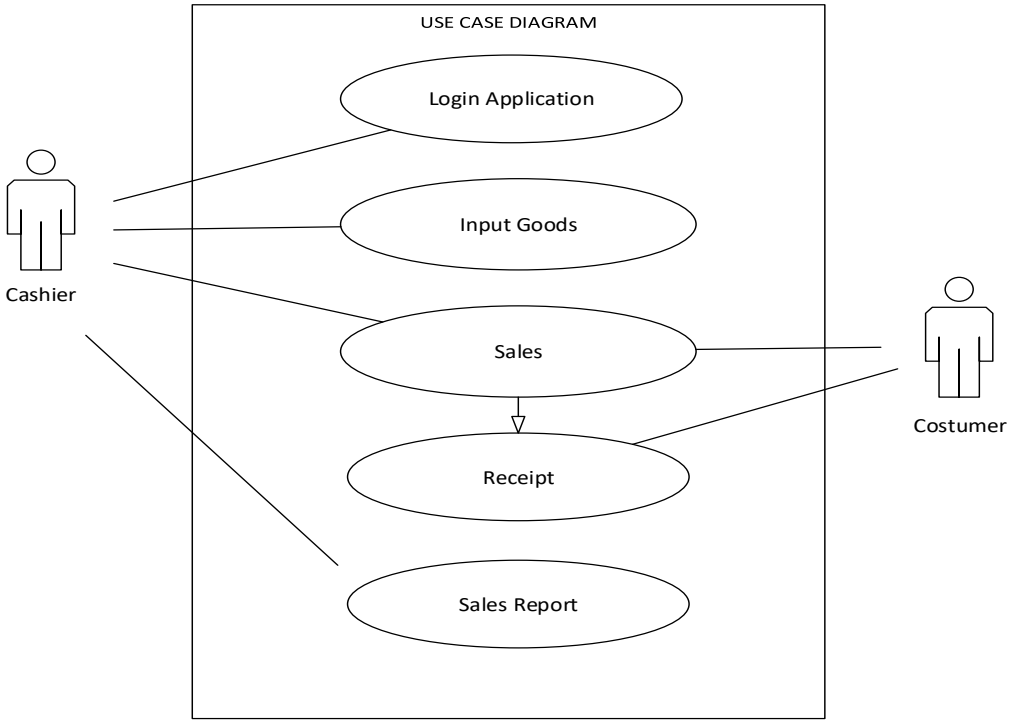

Figure 2. Use Case Diagram of Information Systems for Small and Medium Enterprises

Here's an explanation of the Use Case Diagram:

1. Cashier

   For application operation, Admin must first login to the Application and then proceed to input goods. Once the Goods are available, the Next Stage Admin can

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Manage The Sale of Goods To Consumers And After the transaction will produce a sales report.

2. Costumer

Costumer chooses the goods in the store and then after that directly submit to the Admin. Next Stage Costumer will pay and receive Proof of Payment from admin. The treatment in this station goes through several phases shown schematically Fig. 1.

3.2. Prototype Design and Manufacture

Based on the results of the system requirements analysis that has been made, the researchers have succeeded in making a prototype of the Application-Based Information System for Small and Medium Enterprises. Some of the features required for this system include:

3.2.1 Login Form

Explain about the display of Login That serves as the first step A cashier or admin to enter and manage the sales system and other features. Data to login must be data already listed in the database. The login form display can be seen in Figure 3 below.

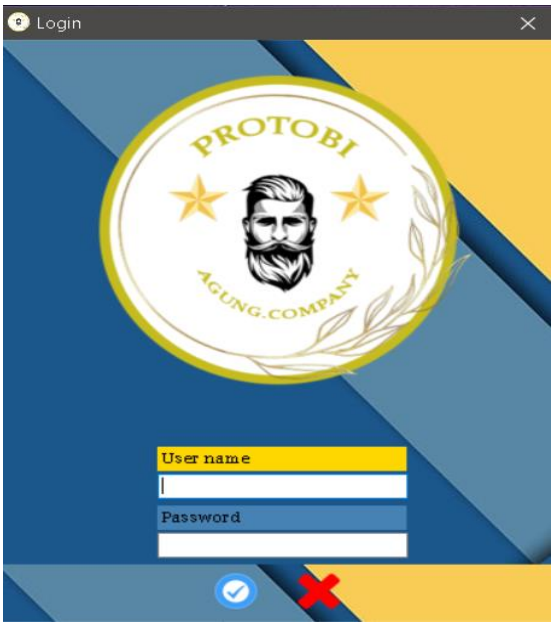

Figure 3. Login Form Interface

3.2.2 Main Menu Form

The next design describes the appearance of the application's main menu which contains features for conducting system monitoring according to User requirements. Starting from the User feature to Manage User Data to the Exit feature to exit the application after it is not used. Main Menu Form display can be seen in Figure 4 below

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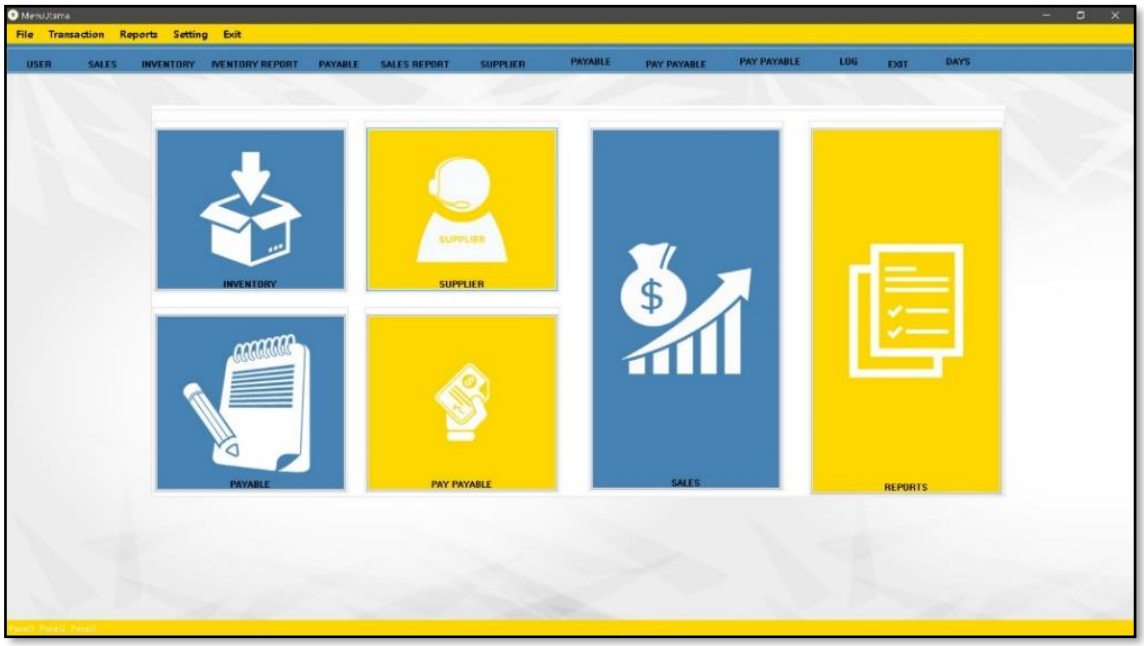

Figure 4. Main Menu Form Interface

3.2.3 Inventory Menu Form

The next design is the inventory menu design view. Where it serves as a precursor Goods Data. The way it works is first the User can enter new item data into the application and then the user can change the date of the item that has been registered starting from the available stock price. Additionally, users can delete item data if it is no longer in use. Finally, there is the Item search feature where the function is to search for the item data that the user wants to change or delete. Display inventory Menu Form can be seen in Figure 5 below.

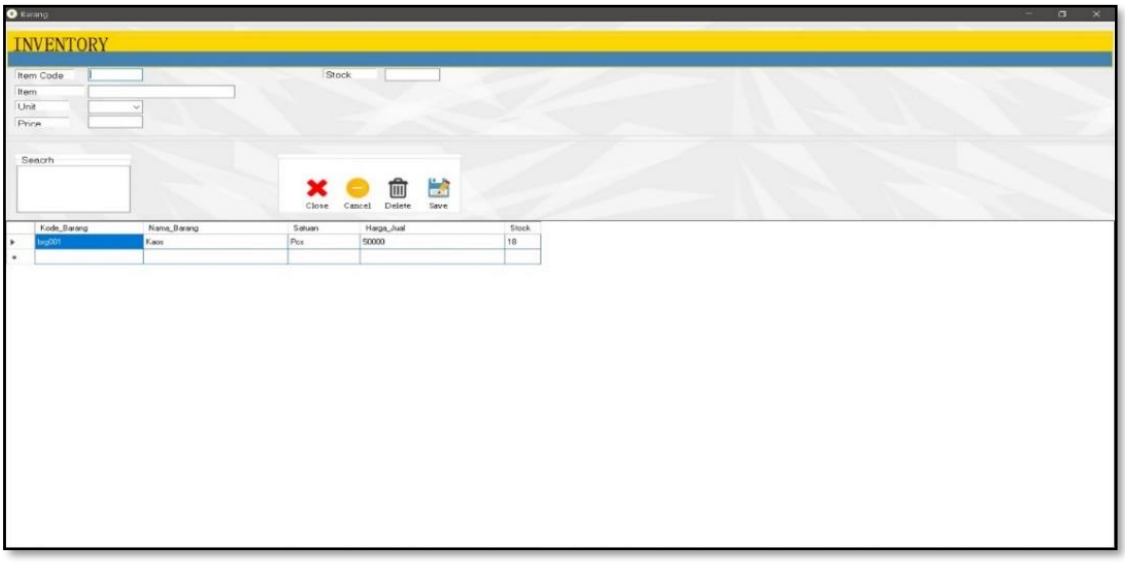

Figure 5. Inventory Menu Form Interface

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3.2.4 Sales Menu Form

Next Image View from the sales menu. The function of this feature is to conduct sales transactions to costumers. The user first enters the item code for the name of the item and the price is automatically listed according to the data entered on the item menu. Next, the user fills in the quantity and after the item is recorded, the user's next step is inputting the amount of payment given by the costumer. For returns will display according to Operation between the total price and payment. If the transaction is correct, then the user can press the save button and a receipt will appear that can later be printed for costumer needs and otherwise the user can press the delete button to restart the transaction. Transactions that have been saved will be recorded into the daily sales report and sales report. Sales Menu Form display can be seen in Figure 6 below.

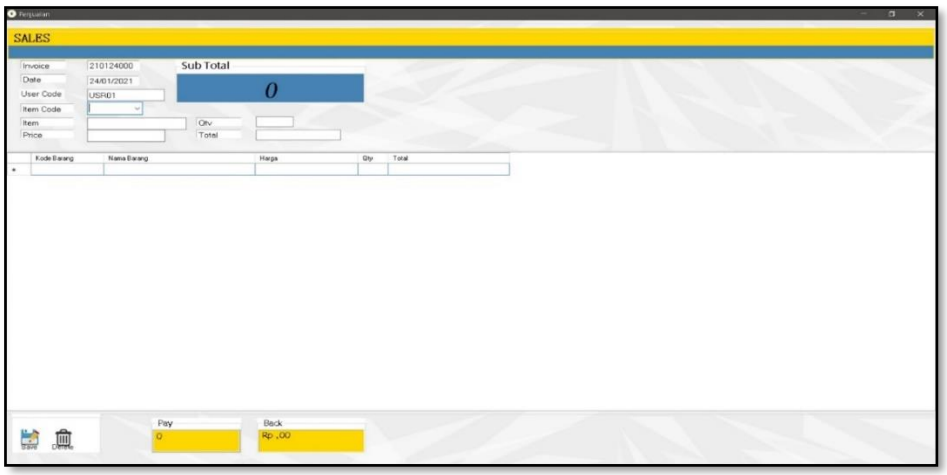

Figure 6. Sales Menu Form Interface

Some studies explain that many benefits arise in using an information system, but it is sometimes bumped by supporting tools that some small and medium businesses take into account.

4. Conclusion

With the design of this application-based information system is expected to provide changes for small and medium businesses in running their businesses. Surely in this application, we make simple features so that it is easy to understand by small and medium businesses, transactions with consumers faster, small errors in inputting goods, and all transaction data will be stored in one application.

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