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Web-Based Coffee Inventory Application (Case Study on One of The Coffee Shop in Sukabumi)

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ABSTRACT

This study aims to gain insights into the inventory requirements of a coffee shop, develop and deploy a web-based application to enhance inventory management efficiency and assess the effects of this implementation on the coffee shop's operational processes. The methodology employed encompasses a blend of qualitative and quantitative techniques for data collecting, encompassing interviews, observations, and system testing. These methods are utilized to develop a comprehensive comprehension of the current inventory system and evaluate the efficacy of the recently built web application.

The findings indicate that implementing the application resulted in a substantial enhancement in inventory management. This condition was achieved through the provision of real-time inventory tracking, a reduction in errors associated with manual recording, and an overall improvement in operational efficiency. The coffee shop workers responded positively to the product, highlighting its user-friendly nature and time-saving capabilities.

Nevertheless, the study posits that forthcoming research should contemplate integrating elements such as predictive analytics to enhance stock management capabilities and develop a mobile iteration to augment flexibility and user-friendliness. This study provides additional evidence to reinforce the importance of implementing digital transformations in small-scale enterprises to address prevalent operational obstacles.

Keywords: Web-based, Application, Inventory Management

INTRODUCTION

The rapid progression of computer-based information technology significantly impacts several facets of employment. (Crawford et al., 2018; Soysal et al., 2019) Most firms employ computer-based information systems to facilitate the distribution of information, enhance work

performance, and improve service quality. Using computers as data processing instruments enables the computerization of all departments inside a corporation, hence facilitating the organization's endeavors to attain its objectives. (Drake & Atkins, 2021; Singh & Verma, 2018) In contemporary times, computers have assumed multifaceted tasks beyond their traditional functions as word processors or calculators. Computers can facilitate several advancements, including the creation of applications and programs. (Prakash et al., 2018; Taufik, 2021; Wibowo et al., 2022)

Inventory refers to the assortment of materials and supplies possessed by a commercial entity or institution intended for sale or use in production activities. (S Pasaribu, 2021; Shi et al., 2023) The fundamental objective of inventory management is to effectively distinguish between the demand for goods or services and the corresponding supply. Inventory management is a comprehensive system that encompasses the planning and supervision of inventory, spanning from the initial stages of raw material acquisition through the last phases of client distribution. (Chowdhury & Nanda, 2018; Puspita et al., 2020) The inventory serves as a central hub inside a corporation, particularly for industrial enterprises, wherein the inventory and its management are intricately linked and substantially influence financial and production aspects. (Ferrari et al., 2021)

Information technology has revolutionized the operations of organizations and institutions, enabling them to carry out various activities effectively. In the past, organizations and institutions relied on physical books in document cabinets to keep their information and documents. (Andriani & Andry, 2023; Supriyanto et al., 2022) However, with the advent of computers, many entities have transitioned to digital storage methods for their data.

At a particular coffee shop in Sukabumi, the current practice for data processing and inventory documentation involves using non-integrated software, such as Microsoft Excel. This scenario leads to disorganized management and control, frequently culminating in replicating item names due to the need for more individual item coding. Generating reports is time-consuming, and the outcomes achieved need to be more accurate. The presence of inefficiency arises due to the requirement for employees to manually verify each data point from the executed transactions, resulting in suboptimal levels of work performance. One further challenge encountered pertains to the insufficiency of inventory data available to other personnel, which can be attributed to the need for a robust system that facilitates the provision of such information.

This study aims to develop a web-based inventory application specifically designed for a coffee business in Sukabumi.

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METHOD

Descriptive methods refer to research approaches that comprehensively describe various settings or events. Descriptive research involves the systematic collection and presentation of fundamental data in a descriptive manner. Uncovering relationships, testing hypotheses, making predictions, and deriving meanings and consequences are not mandatory. However, research endeavors to explore these features may also use descriptive methodologies.

When engaging in research to obtain data and information, researchers frequently utilize the following strategies for data collection:

The first step in the research process is making observations.

The observational method, often direct observation, is highly efficient for gathering empirical data. This approach involves thoroughly examining and recording relevant material through direct research, as exemplified by the case study conducted at PT Barbar Coffee Sukabumi.

The Role of Interviews in Research

An interview is a methodological approach that encompasses formulating direct inquiries or engaging in question-and-answer sessions with employees, specifically managers, to uncover prevailing concerns within the coffee business in Sukabumi.

The present study incorporates a comprehensive literature evaluation to examine relevant scholarly works in the field thoroughly.

This approach involves the direct collection of pertinent facts regarding the system and the acquisition of theories or materials about the inventory system or application through a comprehensive review of existing literature.

The analysis of literary works. This methodology involves the collection of pertinent material from diverse sources to construct an inventory information system.

The survey method is commonly used in social sciences to collect data from a sample population. It involves the administration of a set of structured questions to individuals or groups.

This methodology is employed to comprehend and acquire knowledge about the operational processes of the Inventory System. The process of information collection encompasses the following components:

The act of conducting an interview. The interview is a data model encompassing direct questions or engaging in question-and-answer sessions with employees and management.

The second component of the research methodology is observation. The observational method, or inspection, is very efficient for gathering data and factual information. The present analysis aims to examine and evaluate the given information systematically and rigorously.

The analysis is employed to thoroughly examine the actions related to data protection in a server database, considering control aspects such as recovery, security, integrity, and concurrency.

Methodology for System Development

The methodology employed for system development is the Object-Oriented Software Engineering (OOSE) methodology. The Object-Oriented Software Engineering (OOSE) method emphasizes incorporating use cases inside the software development process. The stages of this process are outlined as follows: Analysis: The gathered data will be analyzed to comprehend the system needs and ascertain the requisite entities. The design stage involves the development of the system's architecture, operations, interfaces, and user interactions. Implementation: Subsequently, the finalized design is converted into executable program code.

Testing is conducted after the completion of the system to verify its proper functioning.

RESULTS and DISCUSSION

Descriptive methods refer to research techniques that generate depictions or descriptions of specific settings or events. Descriptive research primarily involves the systematic collection of fundamental facts in a merely descriptive manner, without the intention of seeking or explaining correlations, testing hypotheses, making predictions, or deriving meanings and implications. Nevertheless, scholarly investigations that elucidate these facets may also integrate descriptive methodologies.

Following the thorough analysis and detailed design of a system, the subsequent phase is referred to as the implementation stage. This phase entails the activation and implementation of the system. The current stage involves the conversion of the coded logic into the selected programming language.

The practical implementation of this system necessitates three key components, namely:

a) Hardware components, such as motherboards, are crucial in computer systems.
b) Various software applications, including Dreamweaver and Windows 7, are commonly used.
c) Brainware, often known as human resources, is a critical component of an organization's overall functioning.

Implementation Limitations

In implementing this monitoring and application control software, there are several things that become implementation limitations, namely:

1. The application that is built includes the process of sales and purchase transactions, inputting goods data, and

displaying reports on purchases, sales, and stock of goods.

2. The database used in this implementation is MySQL

Software Implementation

To implement the software used in creating this information system, use:

1. Windows XP Professional is the operating system that the author uses.
2. NetBeans IDE 7.3 is a Java programming application for creating inventory information system programs.
3. Apache friends Xampp 1.6.3., and MySQL 5.1.41. Apache friends Xampp 1.6.3. used as software because of the speed, stable performance, and performance factors. MySQL is used as a developer in creating databases.
4. Microsoft Visio 2010: This application is used to create all diagram designs.

Hardware Implementation

To run programs on an information system, hardware is needed. The hardware required when implementing the information system includes:

a. Intel Pentium processor or similar class.
b. Use a minimum of 1 GB RAM.
c. 250 GB hard disk.
d. 19" Monitors
e. Keyboard, & Mouse
f. Printers 86

Server Functions:

1. As a resource provider for clients
2. Manage the data flow for the client computer.

Clients:

a. Intel Pentium processor or similar class.
b. Use a minimum of 1 GB RAM.
c. 250 GB hard disk.
d. 19" Monitors
e. Keyboards & Mice
f. Printers

Client function:

1. Can retrieve data on the server computer for processing.
2. Does not require high resources to operate.

In the Sales and Purchasing Information System that the author has created when implementing the program that has been created it is not run as a client-server, only stand alone according to needs.

Operating System Platforms

In order to execute a computer-installed application, it is necessary to have software that is capable of running and providing assistance to ensure optimal functionality of the application. Additionally, the incorporation of software implementation is necessary to assist the practical application of the concept. The software implementations utilized encompass:

The subject of discussion is operating system software. The present software has been developed to manage and orchestrate the

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operations of the computer system. The author utilizes the Windows 7 Ultimate operating system.

Language link devices, or discourse markers or connectives, are linguistic tools to establish connections and relationships between different text parts. These devices play a crucial

The present software application serves the purpose of converting programming language instructions into machine code, hence facilitating comprehension by the computer. The programming language employed in developing this application is web-based software.

Login Implementation

Login Handling System Login The Main Menu in this section describes the appearance of the application program, which is designed according to the design created at the system design stage.

Implementation of user login

First View Form

1. Form Login

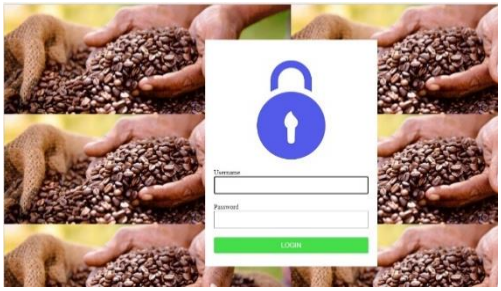

Figure 1. Main Display Login

2. Cashier / Employee Form

Cashier Start Page

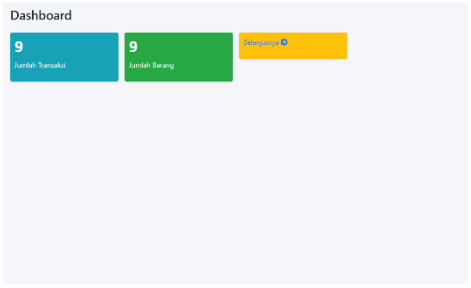

Figure 2. Cashier Login Form

Add Item Form

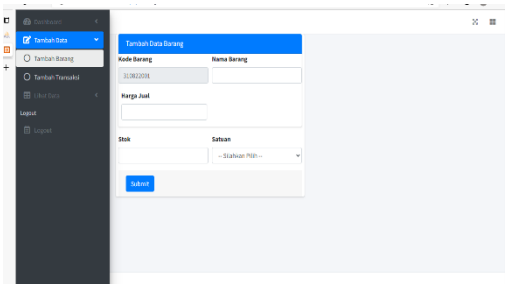

Figure 3. Add Item Form

Sales Form

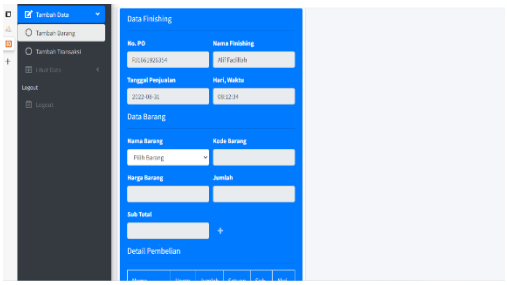

Figure 4. Sales Form

Item View Form

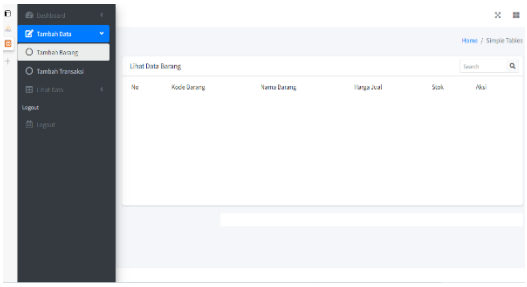

Figure 5. View Item Form

Sales View Form

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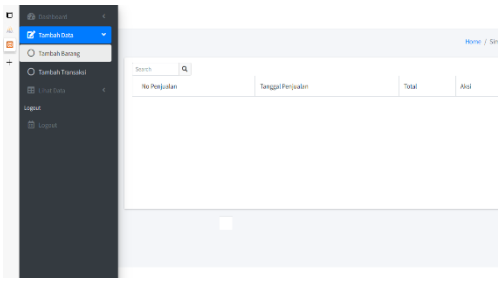

Figure 6. View Sales Form

3. Manager / CEO Form

Main Manager Page

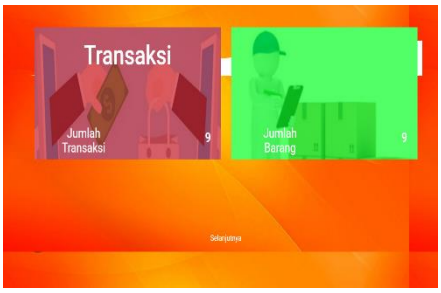

Figure 7. Main Manager Page

View Item Data Form

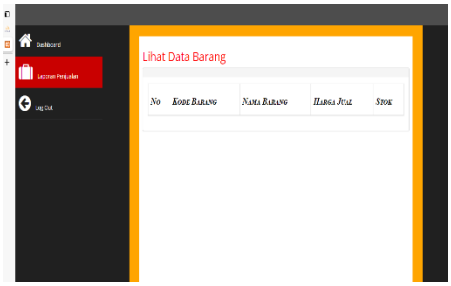

Figure 8. View Item Data Form

CONCLUSION

Based on the comprehensive study of the gathered data and the subsequent discourse on the identified issues, it is possible to derive the following conclusions:

The Inventory Information System of a coffee shop corporation located in Sukabumi is developed utilizing the PHP MyAdmin and Macromedia Dreamweaver software applications, with the assistance of a MySQL database. The system functions on a computer with various data, including product information, incoming product data, customer data, order details, and sales records.

The Inventory Application can streamline the process of documenting the arrival and departure of products, hence enhancing the accessibility of inventory stock information. Additionally, the application is equipped with a function that allows for the generation of reports, facilitating the preparation of reports in a timely, precise, and effective manner.

Proposed Recommendations

The suggested course of action for enhancing the effectiveness of this independent Inventory Information System is to transform it into a client-server architecture.

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