Vol. 1, No. 1, (2021)

Received : February 08, 2021
Accepted : February 12, 2021
Published : March 03, 2021

Conference on Community Engagement Project
https://journal.uib.ac.id/index.php/concept

Implementing Warehouse Management System in Stationery Store

Suwarno[1], Ryo Kusnadi[2]
Information System, Faculty of Computer Science,
Universitas Internasional Batam, Indonesia[1,2]
Email of correspondence: suwarno.liang@uib.ac.id

Abstract

Happy Stationery is a Stationery Store which located in Komplek Tanjung Pantun, Batam. The Company has inventory issue, because they record the product information with paper-based and unstructured excel. Warehouse Management System is a management job that is to organize warehousing problems. In this research, data collection was done by authors by in the form of interviews and observations. And we use SDLC as Development Methodologies. The result of this research was Web Based system which can fullfill the user requirement. this research shows that the implementation of warehouse management system has improved the inventory management process in the store.

Keywords: *Warehouse Management System, Efficiency, Information, Digitalization*

Introduction

Happy Stationery Store is a retail shop that sells stationery such as office supplies, Chinese New Year accessories and sports equipment. This shop is located in Komplek Tanjung pantun jodoh block D No.2, Batam City.

Happy Stationery Store has been established since 1990 and was founded by Mr. Along. Happy Stationery has 9 staff who are assigned their respective duties. 2 people as sales admin and cashier, 2 people as drivers, 1 person as head of warehouse and purchasing, 3 people as customer service and packing, 1 person as Sales Staff.

Operational activities that are usually carried out by Happy Stationery employees are starting from work by cleaning the work environment, then each member will immediately start carrying out operational activities according to their respective positions, Sales admin will receive orders from Sales staff and packing staff will take the product according to customer orders and prepare the packaging to be sent to the customer's location, the cashier will also serve customers who walk in or retail. At noon, sales staff will return to the office to give a Sales order to the sales admin and at 18:00 the shop will close.

The current condition at the Happy Stationery Store is a problem of inventory management because the

head of the warehouse only records incoming supplies with a notebook without using any information systems and technology, from the point of view of receiving orders, the sales admin still use excel. And for sales, the cashier still uses records manuals by using Microsoft Excel. Because of it inventory management by the store is still very messy because there are many variations in the category of goods so that the goods are stored randomly and are not structured. Proper inventory control will make it easier for the company to carry out operational activities and maintain a smooth operation cycle (Ogbo et al., 2014). Control of the inventory system appropriately will facilitate the store to carry out operational activities and maintain a smooth operation cycle store (Putri & Nurcaya, 2019).

For now, the top priority of Happy Stationery system requirement is a system that includes an easy-to-use feature of recording purchases, sales, supplies. So that the warehouse can manage the product with tidy and structured. The Authors believe that with a warehouse Management System is the solution of organize warehousing problems. With the system, we can control movement and material storages in the warehouse and related transaction processes, including shipping, receipt, storage and goods pickup.

Methods

This research use descriptive qualitative research methods to describe the details how is the process of every process in Warehouse Management System. Data collection was done by researchers by in the form of interviews and observations. In collecting research data, we conducted several methods like interview and observations. The main data source in this research is informant who work in Happy Stationery especially those in warehouse management systems and have expertise according to research. The informants in this research was Mr. Teo Pheng Khun as Warehouse Administrator in PT Happy Stationery. Usually, the traditional Warehouse management generally uses non-automated, paper-based documents as the core for tracking and recording of inbound and outbound goods. this warehouse management method is completely manual and inefficient (Yuan, 2019). So that in this research we aims the implementation of digitalization records on warehouse management systems for warehouse efficiency.

After the data was fully collected, we use data analytical techniques methods that developed by Miles and Huberman. Start from data reduction, we do separation of the data from unclear with the goals and too specific one so that our data could have a patterns. After it we need to data displayed to help understand for advanced analysis of certain information regarding the goal. And finally we need to conclude the analysis based on the pattern. ending conclusion is done continuously with the data reduction and data display (Amanda Istiqomah et al., 2020).

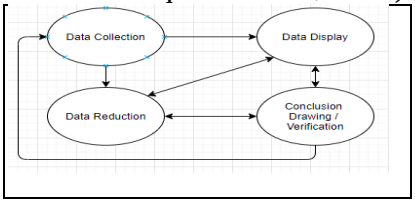

Figure 1 The components of qualitative data analysis
Source: (Amanda Istiqomah et al.)

After user requirement has been collected, the author will start develop the system using Software Development Life Cycle (SDLC) methodologies, it can be used in this research because we will the process stage by stage, without parallel work (Nugraha et al., 2018). The process will start from planning the development environment. Then it will continue with Analysis the business process. After it fully done, we will start from design the database schema by using Mysql as our database environment. After database design is done, we will start building User Interface and it's backend process. the tool that we use in this system development are Visual Studio Code as the code editor, XAMPP for local hosting environment. Programming language that use in this project are PHP by using laravel framework and Angular JS. After the system fully build we will do some test for make sure that it fullfill the business requirement. After it fully done, we will implement it to production environment. In this research we will host the project online by web based due to the user requirement.

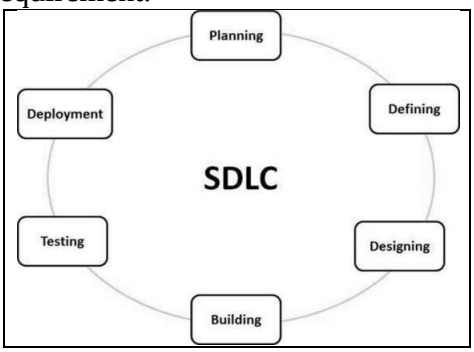

Figure 2 SDLC Process
Source:(Nugraha et al., 2018).

Result and Discussion

In the Happy Stationery, the system was needed is a system to control and operate warehouse activities. The system is called the Warehouse Management System. There are several processes in the Warehouse Management System start from inventory, stock control, and billing record. After analyzing the business process, the authors devide the system into three roles based on their job desk. They are:

1.Super User (For owner), the role can access all module in the system.
2.Warehouse staff, the role can access Product, categories, location and inventory.
3.Purchasing staff, the role can access Customer, Supplier and Billings module.

But the authors doesn't make the role become static, that's mean the superuser (owner) can give or remove certain module access to certain people due to their necessarity. For the report, all user can access the module, because there is no transactions and special requirement to limit their access. The main requirement of this research is digitalization of record process to decrease human error.

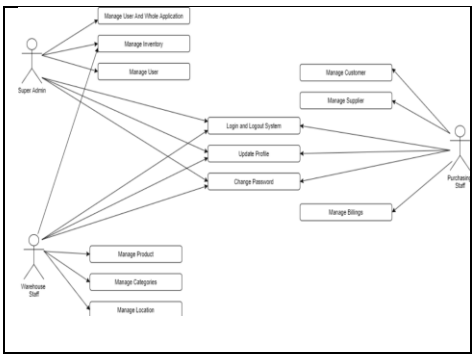

Figure 3 Use Case Diagram
Source: Authors

For fullfill the requirements, there are some modules in this system:
1. For product movement, the

warehouse employees need to record all of their product and categories into system so that they can use inventory module to record inbound or outbound of the product. And also the system already support tracking product based on location code, location code all inputed by owner to prevent wrong location naming.

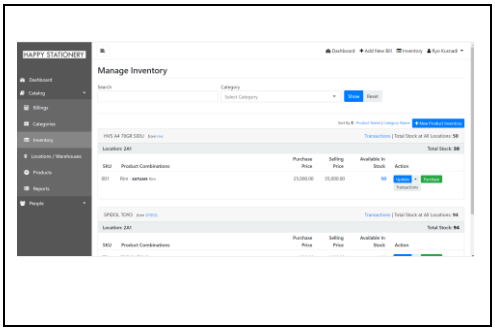

Figure 4 Inventory Module
Source: Authors

2. For Billing record. The purchasing staff need to input all of the customer and supplier information, so that the purchasing staff can make billing to customers. due to not all customers are buying product based on paid method, some customer need to debt to the store with certain due date, the billing module can support both types of transcations.

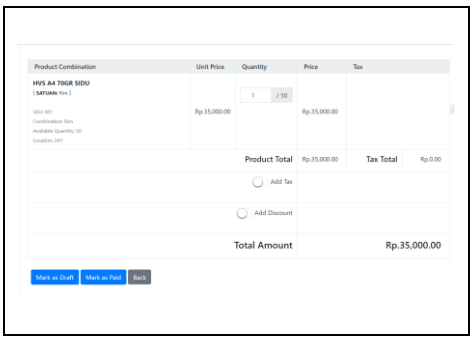

Figure 5 Billing Module
Source: Authors

For fullfill the system development environment, all the process was developed by using Visual Studio Code as code editor and laravel framework and Angular.Js as proggraming language. And using Mysql as database and XAMPP as the local hosting environment.

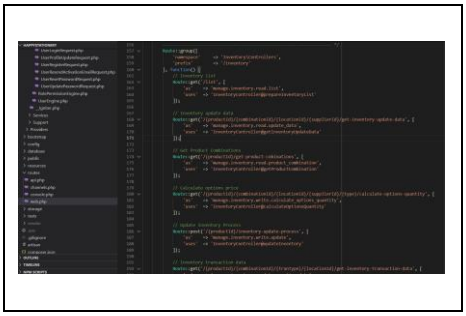

Figure 6 Develop Environment
Source: Authors

After all development done, we are doing testing and discuss with the key user to about does the business logic already fullfill users requirement. If all already fullfilled we deploy the website into production environment. By the deployment of the website, many paper-based record will be replaced by the system, and the recording and tracking of the product will be more easier than previous. and also we can use billing module to record all of the transaction process to have an clear record in transcation records.

Figure 7. Project Implementation
Source: Author, 2021

Conclusions

Based on the results of observations, analysis, and interviews with the Happy Stationery Store employees, it can be concluded that those store still have not implemented a good operational system. The system for recording inventories, purchases, sales made by store is still paper-based.

The most practical system for this business are easy to understand and easy to use system. Stationery stores such as Happy Stationery should emphasize how to increase direct sales with direct sales, marketing by a practical operational system.

The output from system is a web based system, that have warehouse management features. The condition after it's implementation is that with this system, the store can record sales, purchases, inventory using a digital nased system and not do it through paper-based anymore, this will greatly save time and are also more effective in managing stock, inventory and also the Location feature tracking the staff will also be clearer that the product is located in which location, this will greatly save time picking up goods without the customer waiting for a long time.

References

Amanda Istiqomah, N., Fara Sansabilla, P., Himawan, D., & Rifni, M. (2020). The Implementation of Barcode on Warehouse Management System for Warehouse Efficiency. *Journal of Physics: Conference Series*, *1573*(1).

Nugraha, W., Syarif, M., & Dharmawan, W. S. (2018). Penerapan Metode Sdlc Waterfall Dalam Sistem Informasi Inventori Barang Berbasis Desktop. *JUSIM (Jurnal Sistem Informasi Musirawas)*, *3*(1), 22–28.

Ogbo, A. I., Victoria, O. I., & Ukpere, W. I. (2014). The impact of effective inventory control management on organisational performance: A study of 7up bottling company Nile Mile Enugu, Nigeria. *Mediterranean Journal of Social Sciences*, *5*(10 SPEC. ISSUE), 109–118.

Putri, I. G. A. P. A., & Nurcaya, I. N. (2019). Penerapan Warehouse Management System Pada Pt Uniplastindo Interbuana Bali. *E-Jurnal Manajemen Universitas Udayana*, *8*(12), 7216.

Yuan, L. (2019). Research and Practice of RFID-Based Warehouse Logistics Management System. *Proceedings - 2019 International Conference on Smart Grid and Electrical Automation, ICSGEA 2019*, 514–519.