Inventory Management Application at WanzBikerspot Store Web-Based

Himawan Lutfi and Saruni Dwiasnati

Department of Informatics, Faculty of Computer Science, Universitas Mercu Buana Jl. Raya Meruya Selatan, Kembangan, Jakarta 11650, Indonesia

Corresponding Author:
Himawan Lutfi
Department of Informatics, Faculty of Computer Science, Universitas Mercu Buana Jl. Raya Meruya Selatan, Kembangan, Jakarta 11650, Indonesia

Abstract: WanzBikerspot is an online business in the automotive category available on the Tokopedia, Bukalapak and Shopee marketplaces. The system that is already running is still manual such as recording sales, incoming goods, stock items, supplier information and making reports that are still written in books. The management still looks at the amount of stock through memory or checks one by one. This of course slows down performance because it is not effective. Sales records and reports are also very time-consuming because you have to write and calculate one by one. Based on these problems, a special website-based application is needed for online stores where the application can see the number of available stock items, goods data, incoming goods data, transaction data, supplier information, input transactions, input incoming goods and create transaction reports that can be printed to improve the performance of the board. Also, there is a fee calculation for each marketplace where the income statement is calculated by the fee charged to the management as the seller. This research is website-based using PHP as a programming language and MySQL as a database. This application is made specifically for sellers in the online marketplace shop. With this application, it can help online shop businesses effectively and prevent data errors from occurring as has happened in the previous manual application of the system.

INTRODUCTION

The ease of opening a business is very easy just by opening a shop in the marketplace. Thousands and even millions of users in each marketplace can be used as business opportunities and targets to earn income without the need to build/rent shop houses, pay salaries of many employees, pay shop operational bills and so on. Only by registering can you open a shop and run an online trading business. WanzBikerspot is a home-based online business that has been running, since, 2017. The business is engaged in the automotive sector such as helmet accessories, motorcycle accessories, car accessories, care/shine, masks, buff/balaclava and other biker needs. The online shop WanzBikerspot has spread across three marketplace platforms such as Tokopedia, Bukalapak and

Shopee. Within three years from 2017-2020 WanzBikerspot has managed to sell tens of thousands of products just by selling online. However, the shortcomings in the product management of this business are that it is not good at recording manual inventory of goods so that it takes a very long time and is less efficient. There are >100 types of goods for sale. The stock recording is still manual by checking goods in the warehouse or through memory. If you look at the amount of stock through the website or marketplace application itself, it is not effective because there are frequent bugs, there is no notification that the goods will run out which causes the goods to be set inactive (not sold) by themselves without the user's knowledge. This makes the shop manager not know that there are items that the prospective buyer cannot see, so, there is no income for it. In addition to manual stock recording, WanzBikerspot is also still manual in recording transaction data, incoming goods data and making turnover reports by writing in a book. Often there are errors in writing and calculations that cause it to be checked or recalculated so that it takes a very long time because in one month it can sell up to 500 products.

Based on these problems, a special website-based application is needed for online marketplace stores where the application can see the number of available stock items, data on goods sold, data on incoming goods, transaction data, supplier information, input transactions, input goods entered and make transaction reports and incoming goods report that can be printed to support store operations to improve the performance of the management in managing stock items and making reports. In addition, there is a fee calculation for each marketplace so that the income statement is calculated with the fee charged to the management as the seller.

This research is applied specifically to online stores due to the calculation of fees in each marketplace. This research is also made according to the necessary needs. In addition, in the transaction entry, there is no invoice because in the online invoice business the buyer can easily get it directly for each paid transaction.

Because the use of this application is tailored to the needs of each company, therefore the contents of this type of application are very diverse in form and concept[1]. The rapid development of technology in today's era is very interesting to develop flexible technology. This hope arises because of the many people who want to be practical in everything. With the development of technology, various types of new systems have emerged that can fulfill the desires of people who want to be completely practical, especially in trading companies[2]. The use of information technology is mandatory for business actors, especially the trade sector as supporting services for business actors. Web-based applications are the choice of business actors to provide fast and good service to their employees[3]. In general, inventory functions to manage merchandise inventories that are always changing in quantity and value through buying and selling transactions.

A programming language is a communication tool between humans and computer devices. Currently, technological developments related to programming languages are very sophisticated and are widely applied to every tool that helps human work. Language is divided into three, namely low-level programming language (low-level programming language), middle-level programming language (middle-level programming language) and high-level programming language (high-level programming language). High-level programming languages are the most developed languages. Since, the emergence of the C language created by Dennis Ritchie, it has become the foundation of several other programming languages such as Java (James Gosling), C++ (Bjarne Stroustrup), PHP (Rasmus Lerdorf) and others[4].

MATERIALS AND METHODS

The method of data collection is done through the observation method. Direct observation by knowing how the system and workflow of the research object. Starting from how to handle outgoing transactions, incoming goods, recording store revenue and managing goods in the warehouse.

This type of research uses quantitative methods. The research was conducted based on a case study in which the author was directly involved and understood the conditions and needs of the object of this research. The object of this research is the online shop business[5].

The research phase is a series of research processes where the researcher starts observing the problem to the research process. In this study, the stages to be carried out can be seen in Fig. 1.

CodeIgniter (CI) is an open-source web application network that is used to build dynamic PHP applications. CodeIgniter is a PHP framework with an MVC (Model, View, Controller) model for building dynamic websites using PHP which can accelerate developers to create a web application. Besides being lightweight and fast, CodeIgniter also has super complete documentation along with examples of code implementation. This complete documentation is one of the strong reasons why many people choose CodeIgniter as the framework of choice.

The PHP programming language is a programming language that is often embedded in HTML. PHP itself comes from the word hypertext preprocessor. The history of PHP was originally short for Personal Home Page
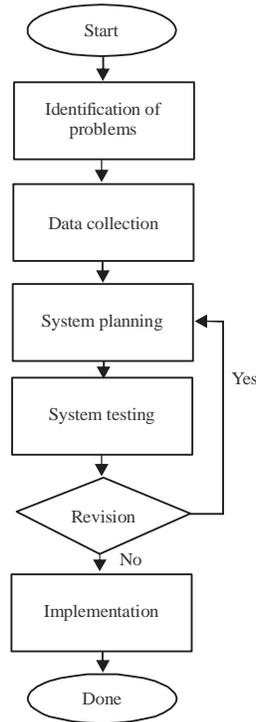
Fig. 1: Block diagram of research stages

(Personal site). PHP was first created by Rasmus Lerdorf in 1995. At that time PHP was still called Form Interpreted (FI) which took the form of a set of scripts used to process form data from the web.

This programming language uses a server-side system. Server-side programming is a type of programming language in which the script/program will be executed/processed by the server. The advantages are that it is easy to use, simple and easy to understand and learn.

E-Commerce in general is the activity of buying and selling goods/services or transmitting funds/data via. electronic networks, especially, the internet. The development of information technology and software makes conventional transactions possible to be carried out electronically. Website is used as a substitute for an offline store. E-commerce websites include various functions such as product storefronts, online ordering and stock inventory, to carry out their main function as e-commerce. The software used is installed on an e-commerce server and works simultaneously with an online payment system to process transactions. In general, e-commerce means doing business through interconnected networks (internet).

The sales fee charged to the seller is different from the previous one. Based on experience from around 2017-2018, the three e-commerce sites such as Tokopedia, Shopee and Bukalapak do not charge sales fees, aka free. All transactions made by pure sellers will be fully accepted by the seller itself. However, it is estimated that in mid-2019 the sales fee will begin to be charged to all merchants/sellers in each e-commerce such as Tokopedia, Shopee and Bukalapak. This fee is charged for every incoming transaction/order. The amount of fee charged varies. The amount charged is Tokopedia 1%, Bukalapak 4% and Shopee 5.8%[6].

For Tokopedia, the 1% fee is charged to stores that have the title Power Merchant. For Bukalapak, a fee of 4% is charged to stores that have the title of Super Seller in the category of household, industrial, bicycle, car and motorcycle accessories/parts and sports. And finally, for Shopee, the number of fees at stores with the title Star Seller which I have calculated can reach 5.8%. This amount includes admin fees and service fees[7].

Turnover is the total value of product sales within a certain period of time. Turnover can be called gross income because this income has not been deducted by costs incurred for capital, such as production costs, employee salaries and other operational costs. The turnover value of a company is often the benchmark for assessing the group of companies, whether small, medium, or large. However, the figures that appear in the turnover are still a rough count, so they do not reflect the actual net profits the company gets[8].

Profit refers to the selling value of a product after deducting the cost of capital. A value is called profit if it is net or deducted by various cost components incurred by the company in producing or marketing products. Some of these cost components include production costs, employee salaries, shipping costs, electricity, marketing costs and so on. Profit expresses the true value of the profits earned by the company, so, it is also called net income.

MySQL is an open-source relational database management system (RDBMS) with a client-server model. Meanwhile, RDBMS is software for creating and managing databases based on a relational model[9].

Data Manipulation Language (DML) is a DBMS package that allows the user to access or manipulate data as it has been previously organized in an appropriate data model. Commands-SQL commands that are used to process data contained in tables such as insert, update and delete[10].

RESULTS AND DISCUSSION

In the early stages of making a web-based inventory management application system, the system design is carried out first by making use of case diagrams and activity diagrams.

Use case diagrams are a description of some or all of the actors, use cases and their interactions that introduce a system. The following is a use case diagram of a web-based inventory management application system aimed at Fig. 2 and 3.
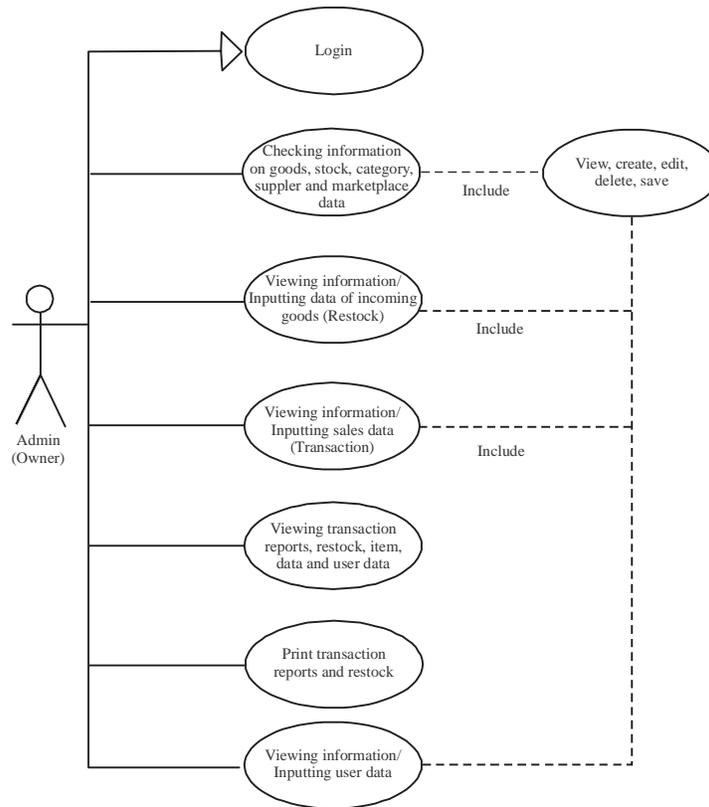
Fig. 2: Use case diagram of admin
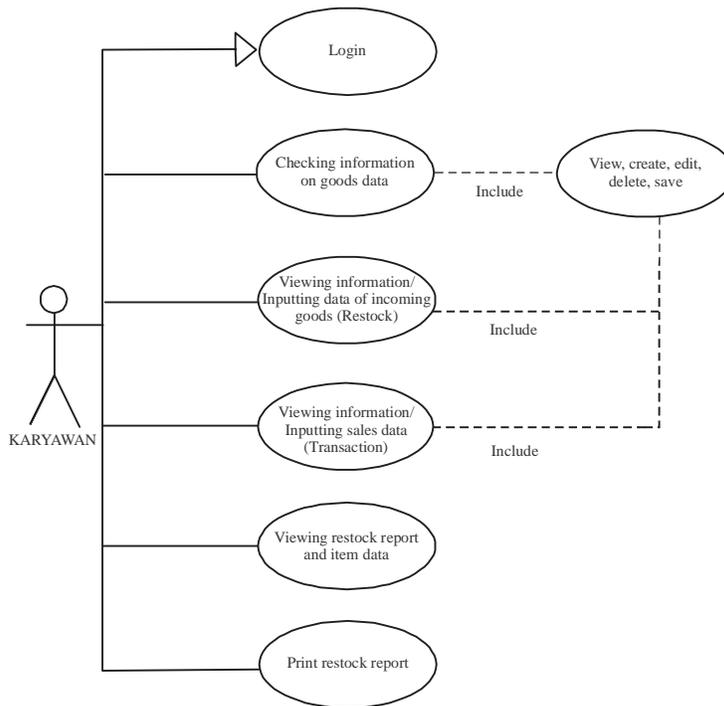
Fig. 3: Use case diagram of employees
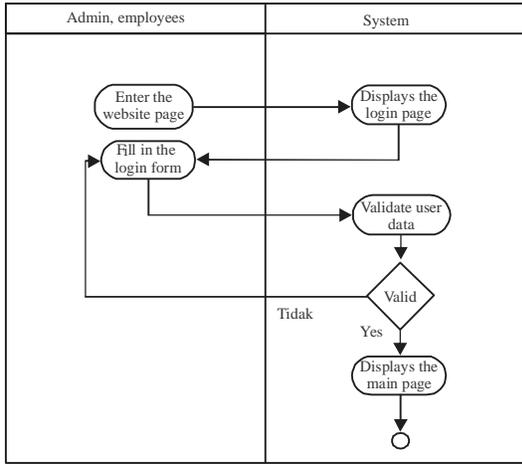
Fig. 4: Activity diagram of admin and employees SideLogin

There are 7 admin actors who can log in, check information on goods/stock/supplier/marketplace data, view information/input data on incoming goods (restock), view information/input sales data (transactions), view transaction reports/restock/item data/user data, print transaction/restock reports and view user information/ input data.

Then on the actor side, there are 6 employees who can log in, check information on item data, view information/input data on incoming goods (restock), view information/input sales data (transactions), view restock reports/goods data and print reports restock. The employee actor here is a user created by the admin. If you want to add another user, it can be arranged through the User menu on the Admin side.

Activity diagram is a description of the activity of a system, starting from the beginning until the end of the system activity. In Fig. 4-10, the following is the activity diagram that the author has created.

In Fig. 4, both the admin and the employee can do the same thing, namely login. In Fig. 5, the admin is given full menu access which is on the master data menu.

In Fig. 6, admins and employees can create a transaction data or create a data restock. In Fig. 7, the admin is given complete report access rights on the reports menu.

In Fig. 8, there is a menu that is only given specifically for admins, namely the user menu. Useful for managing or creating users on the website.

In Fig. 9, employees are restricted from accessing the menu on the master data menu. Only given access to the item data menu. In Fig. 10, employees are only given limited access to the Restock report and the Goods Data report.

The results achieved from this study are the web-based supply management application at
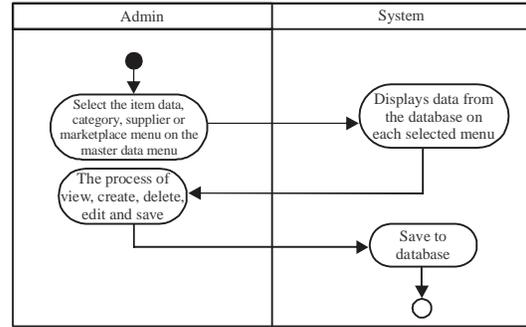
Fig. 5: Activity diagram of admin side master data menu
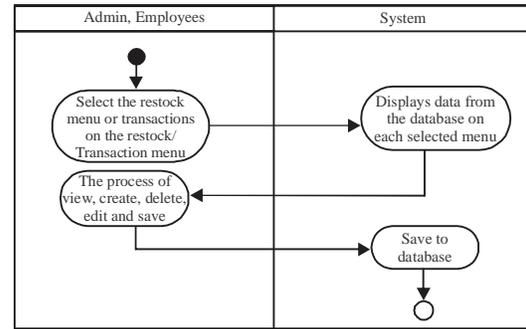
Fig. 6: Activity diagram of the restock menu/admin and employee side transactions
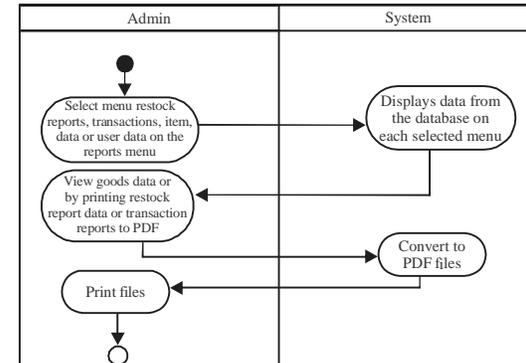
Fig. 7: Activity diagram admin side report menu

Table 1: Amount of fee

Marketplace	Amount of fee (%)
Tokopedia	1
Bukalapak	4
Shopee	5.8

WanzBikerspot store as a work support application in the online shop business. The elements in this application are login, data input, data view, report view and report print. The amount of fee charged to the store when inputting transaction data according to the provisions of each marketplace can be seen in Table 1.

The following is a page view of the inventory management application that has been created. Figure 11 shows the front page of the website shortly after logging in. There is a side-menu on the left and there is a shop image on each marketplace that you can click on so you
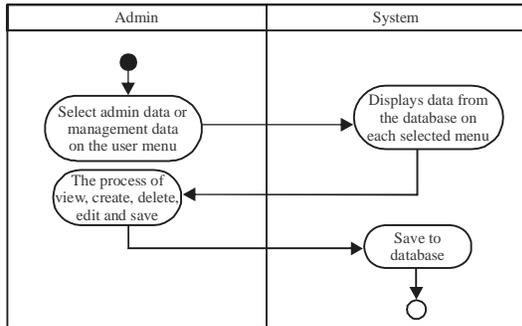
Fig. 8: Activity diagram of admin side user menu
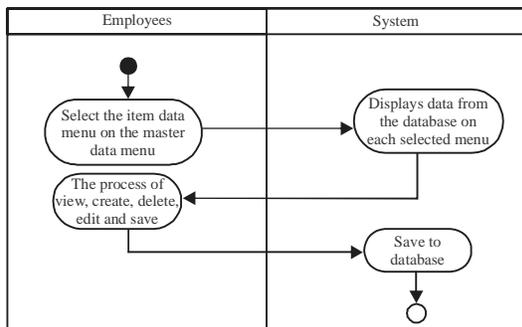
Fig. 9: Activity diagram of employee side master data menu

can go to the destination store in each marketplace. Figure 12 is a display of master data-item data in which there is information about data on goods sold. There is important information about the category, selling price, capital price, profit on goods, amount of stock and the name of the supplier.

Figure 13 is a display of master data-supplier data which contains store supplier information. There is a shop link or contact number along with the supplier's address. Figure 14 is master data-category data that contains the types of categories sold.

Figure 15 is master data-marketplace data which contains the name of the marketplace. Figure 16 is information about the data for incoming goods (restock). There is information regarding the date it was made, the number of goods, the name of the supplier and information. This description field is optional. Data restock is created if the store restocks goods.
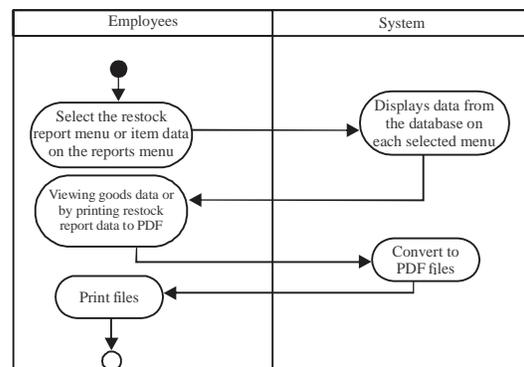
Fig. 10: Activity diagram of employee side report menu

Fig. 11: Front page view

Fig. 12: Display of goods master data

Fig. 13: Display supplier master data

Fig. 14: Display of category master data

Fig. 15: Display of marketplace master data

Fig. 16: Display restock data

Fig. 17: Display view restock data report

Figure 17 is a display of the restock data report where it can filter items by date, month and year. Figure 18 is a report that is ready to print. Figure 19 is information about the transaction data that has been made. When creating

Fig. 18: Display print restock data report

Fig. 19: Display of transaction data

Fig. 20: Display transaction data view

transaction data, you must enter the amount, category, marketplace name, marketplace fee amount and description. After the data is created, the date when created will appear. The description field is optional. Figure 20 is a display of the transaction data report where it can filter data by date, month and year. In addition,

Fig. 21: Display print transaction data

Fig. 22: Display item data report view

there is also a nominal total turnover, net turnover and the total number of items from the transactions made. The net turnover results obtained have been calculated by the fees charged.

Figure 21 is the result of the report that is ready to print. Figure 22 is an item data report that can be used by administrators for stock taking activities.

CONCLUSION

Based on the results of the implementation and testing of the research that has been carried out, the conclusions are drawn:

This application has been successfully built by the planning and design that has been done. In this application, the admin user and employee user access rights can be distinguished.

Data reports of incoming and outgoing goods can be made easily, quickly and accurately so that they can be presented on time. With this application, it can reduce errors in making data and reports that are often complained of while still recording through books.

REFERENCES

01. Setyarini, P., D. Setiyadi and F.N. Khasanah, 2017. [Inventory information system using the FIFO method at PT Albahar Cipta Sentosa Bekasi (In Indonesian)]. J. Hum. Dev. Stud., 2: 49-62.

02. Naufal, F. and S.D. Asri, 2019. [Web-based application for recording the entry and exit of trade goods in MSMES. Case study: CV. tiara cell (Gadget counter and accessories) (In Indonesian)]. J. Eng. Comput. Sci., Vol. 3, No. 2. 10.22441/jitkom. 2020.v3.i2.003

03. Hengki and Susan, 2017. [Analysis and design of web-based ship parts inventory information system: A case study of Asia Group Pangkalpinang (In Indonesian)]. SISFOKOM J., Vol. 6, No. 2. 10.32736/sisfokom.v6i2.258

04. Rebecca, 2016. Definition of E-commerce (electronic commerce). Progresstechgroup Ltd, Indonesia.

05. Ramadhani, N., 2020. [What is turnover? The difference between turnover and profit in business]. PT Akseleran Keuangan Inklusif Indonesia, Jakarta, Indonesia. (In Indonesian)

06. Tan, D., 2017. Knowing what is the code igniter framework. knowledge base. Cloudhost Inc., Indonesia.

07. Yasin, K., 2019. Understanding PHP and its Functions. Ecommerce Hosting Blog, WordPress, Indonesia.

08. Anjarwati, D.A. and S.D. Asri, 2019. [Information system reporting damage of general facilities in web-based terminals (In Indonesian)]. CESS. J. Comput. Eng. Syst. Sci., 4: 152-156.

09. Nauli, S.B., 2019. [Analysis of the design of raw material inventory systems in pharmaceutical companies]. FIFO Sci. J., 11: 198-207.

10. Yosan, R.B., M. Kholil and B. Hanum, 2018. Implementation of Inventory Management System (IMS) case study on XYZ online store business unit. IOP Conf. Ser. Mater. Sci. Eng., Vol. 343, No. 1. 10.1088/1757-899X/343/1/012022