JURNAL TEKNOLOGI DAN OPEN SOURCE
Vol. 5, No. 2, December 2022, pp. 189~199
e-ISSN: 2622-1659, accredited Four Grade by Kemenristekdikti, Decree No: 36/E/KPT/2019
DOI: 10.36378/jtos.v3xx

Design a WEB-Based Stock Information System on PT. Giordano Indonesia Baywalk Mall Branch

Della Hetiosa[1], Ishak Kholil[2] ,Dicky Hariyanto [3]
[1,2]Program Studi Sistem Informasi Universitas Nusa Mandiri
Program Studi Sistem Informasi Universitas BSI[3]

Article Info

Article history:

Received 11 23, 2022
Revised 11 25, 2022
Accepted 12 06, 2022

Keywords:

Design and Build
Information Systems
Stock System

ABSTRACT

In today's age of globalization, information technology is advancing rapidly. In the case of computers, created to facilitate human work, the advances are both in the production of hardware and software. PT. Giordano Indonesia urgently needs an information system that can support its customers and provide them with satisfactory service. For this reason, the author is trying to create a final project about the goods transfer system on PT. Giordano Indonesia which has not been computerized yet. At this time PT. Giordano Indonesia is a company that operates in the retail sector. The existing system at PT. Giordano Indonesia is still operated manually, starting from data recording of goods to reporting, which includes the process of goods transfer, goods receipt data, goods issue data, storage of other data related to inventory, and report generation, which may cause errors in recording, inaccurate reports, and delays in finding the required data during the process. The development of this information system is the best solution to the problems that exist in this company and with a computerised system, effective and efficient activity can be achieved in supporting the activities in this company. The computerised system is better than the manual system to work more effectively and efficiently, and the current sales system is more conducive than the previous system.

Corresponding Author:
Ishak Kholil
Program studi Sistem Informasi
Universitas Nusa Mandiri
Jakarta, Indonesia
Email : ishak.ihk@nusamandiri.ac.id

1. Introduction

PT Giordano Indonesia is one of the trading companies operating in the retail sector. It carries out transactions on the purchase, sale and inventory of goods, with all activities having reporting data. Reports are important for any company because they can give an overview of the company's performance and the health of the business operated [1]. Another important thing in the activities of trading companies is the inventory, which certainly has something to do with the sustainability of the company's activities, which is trading. Inventory is the stock of an item or resource used in a business organization. Inventory can be a problem in a business, such as too much inventory or too little inventory to meet consumer demand [3]. he term inventory is generally

intended to refer to goods that are owned by the company and sold in the normal course of business or consumed in the production of goods to be sold [4].

Inventory of goods is not only about the many and few goods needed, but also about the process of transferring or sending goods from one warehouse to another [5]. Such as the company PT. Giordano Indonesia has more than two branches in Jakarta. The process of sending goods from one branch to another is quite time-consuming, and the data that must be clear to carry out the process of sending goods, for delivery, data such as the number of goods sent, the type of goods sent and the day of delivery, and the process of collecting the goods are required [6]. Conversely, the receiving branch must have the same data as the sending branch. For the goods that have reached the receiving branch, the number of goods and the type of goods received must be the same as the sending branch or not. In order to have clear data, the company needs a web-based system that facilitates the process of data entry and transfer of goods [7]. With this research, we hope to create an online-based inventory application so that this system, when applied to PT Giordano Indonesia, will be able to improve the performance of business activities and be more efficient.

The research that the author uses as reference is as follows: Analysis and design of inventory information systems at PT. Gem data people [8] the purpose of the research. The purpose of this research was to design an inventory system at PT. Gem data people that can later be accessed at any time and present information quickly so that they can present a directed display of information. In another study entitled Analysis and Design of Inventory Information System at PT Cipta Rasa Multindo[9], The objective of the study is to analyze and design an inventory information system that will support the storage and management of goods and reduce the use of paper at PT Cipta Rasa Multindo and simplify the process of recording and managing inventory through a new system. Research entitled Design of an intranet-based inventory information system [10] The author's goal is to design an inventory information system that makes it easier for companies to meet customer requirements. In another study titled Application of barcode technology in processing payment data for donations in educational coaching (spp) [11], Research aims to improve the accuracy of the data produced. Implementation of web-based inventory information system (case study: CV. Sinar Abadi Cemerlang) [12], This research shows that the use of web-based applications really supports the smooth running of the company's inventory management system.

2. Research Method

The model used in the development of the stock information system at PT PT. Giordano Indonesia Baywalk Mall branch uses the waterfall model [13] which is divided into 4 (four) phases, namely:

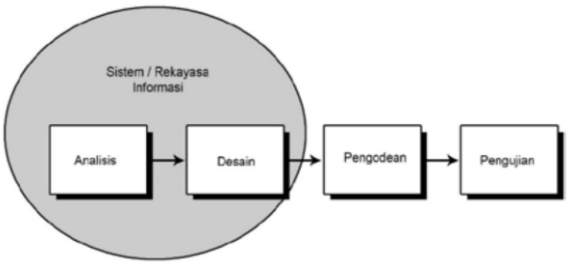

Figure 1. Waterfall Model Illustration

a. Analyse
   Needs analysis [14] In the design of the stock information system, the author collects data directly through observation and interview in PT Giordano Indonesia Baywalk Mall Branch. At this phase, the need for warehouse software is identified.
b. Design
   In this design phase, the author created a design with phases starting with the creation of use case, ERD, LRS, activity diagram, prototype, class diagram, sequence diagram, [15] so that the implementation of an information system for the transfer of goods on PT is facilitated. Giordano Indonesia Baywalk Mall Branch.
c. Coding

Coding [16] code using the Code Igniter framework and php and java programming tools and languages. The interface is designed according to the needs of the company. This method focuses more on programming and in this phase a deeper testing is also done in relation to the modules created, whether they run properly or not.

d. Testing
At this phase, a module check will be carried out [17] which was created in the previous phase and aims to find out whether the software matches the design and functionality of the application created.

3. Result and Discussion

A. Software Needs Analysis

At this phase explains the phase of the analysis of the functional requirements for the system by Store staff and the Store Admin. The following is a specification of the system requirements of a web-based stock information system.

Store Staff Page:

A1. Store staff can login
A2. Store staff can manage the store data
A3. Store staff can manage the employee data
A4. Store staff can manage item data
A5. Store staff can manage item categories
A6. Store staff can manage stock-in data
A7. Store staff can manage stock-out data
A8. Store staff can see the stock-in details of items
A9. Store staff can print item stock-in reports
A10.Store Staff can print stock-out reports

Member Admin Page:

B1. Store Admins can login
B2. Store Admins can manage item data
B3. Store Admins can manage item stock-in data
B4. Store Admins can manage item stock-out data
B5. Store admins can print item stock-in reports
B6. Store Admins can print stock-out reports of items

B. ***Use Case Diagram***

This diagram describes the functions of the system and the interlocking parts of the system, Usecase diagram [19] used during the analysis process to simultaneously assemble a system and understand how the system works. The use case in Figure One describes the interface for shop staff to access the Stores, Staff, Merchandise, Stock and Reports menu. In the access menu, staff can edit the data, namely enter, save and update.

.

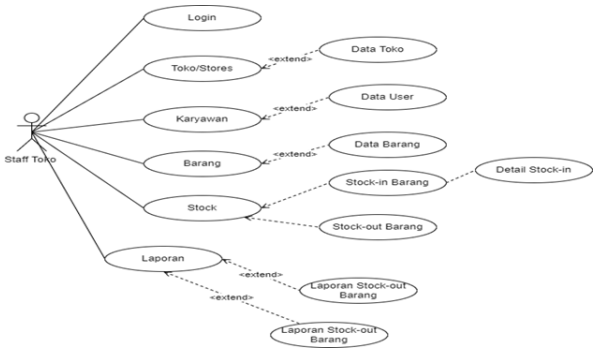

Figure 2 Use case diagram of the store Staff

The use case diagaram in figure two describes the interface for store admins who have access to menu items, stocks and reports. On the access menu, the store admin can process the data, namely input, save and update.

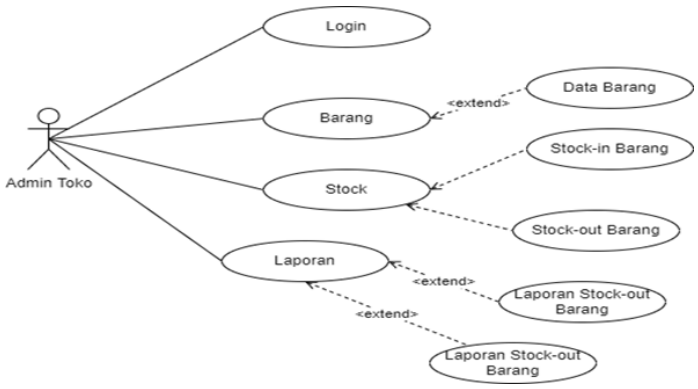

Figure 3 Store Admin Usecase Diagram

C. Activity Diagram

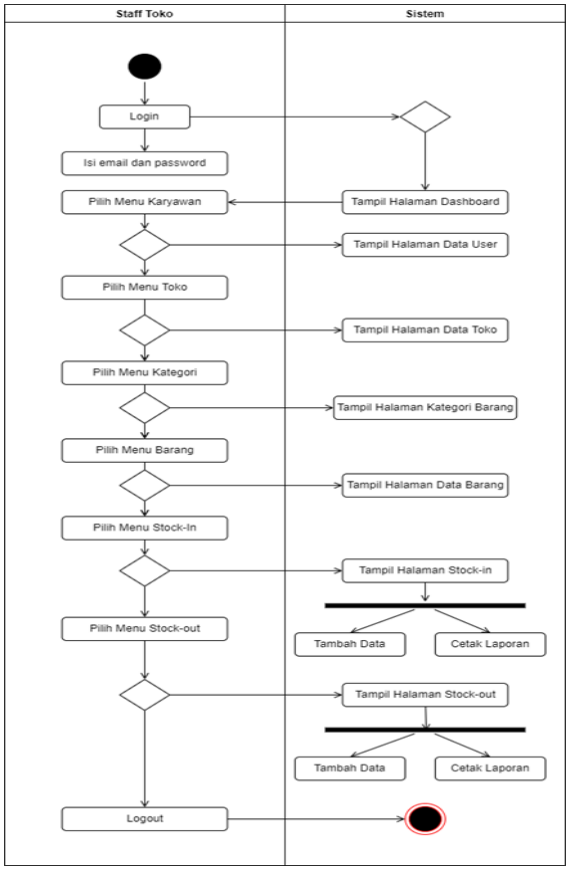

Figure 4 Store Staff Activity Diagram

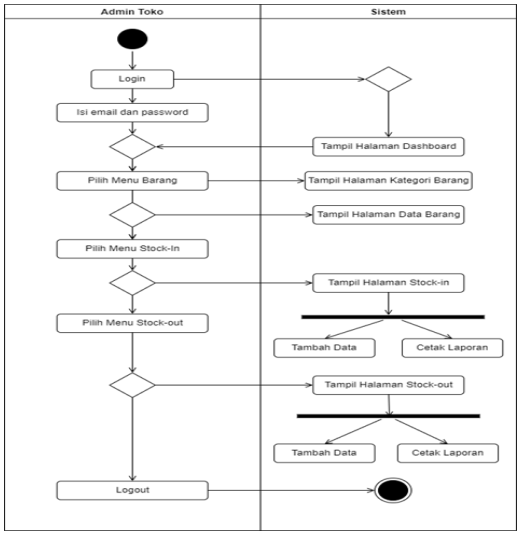

Figure 5 of the Store Admin Activity Diagram

D. Database Design

Database design [20] describes the relationship between one table and another in the database to be created, database drawing using entity relationship diagrams, logical record structure.

1. Entity Relationship Diagram

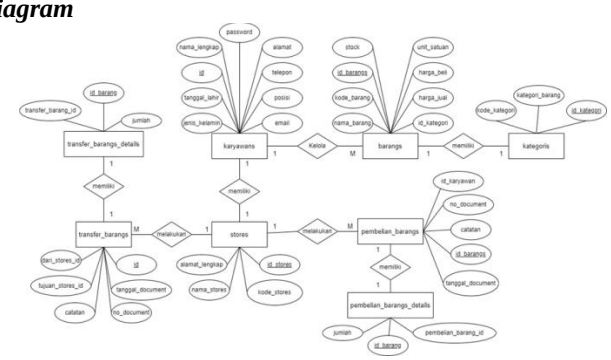

Figure 6 *Entity Relationship Diagram*

2. Logical Record Structure

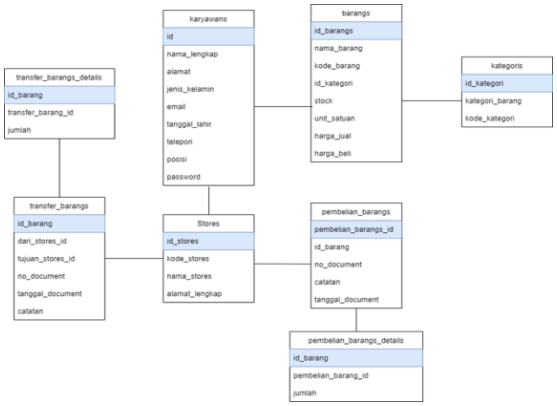

Figure 7 *Logical Record Structure*

E. Software Architecture

Explanation of the process to translate the structure of an application to be able to meet all technical and operational criteria, taking into account the quality of an application designed [21]

1. Sequence Diagram

Sequence diagram is a diagram used to describe and display the interaction between objects in a system in detail [22]

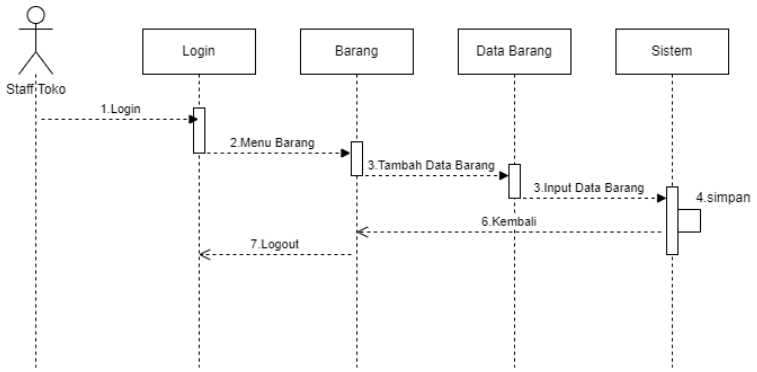

Figure 8. *Sequence diagram item data*

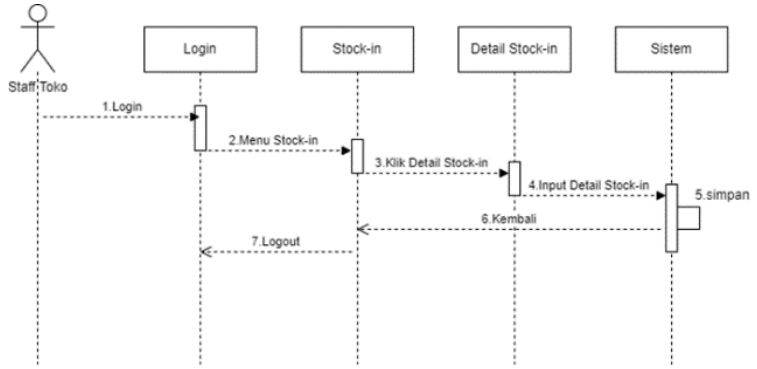

Figure 9. *Sequence diagram Stock-In*

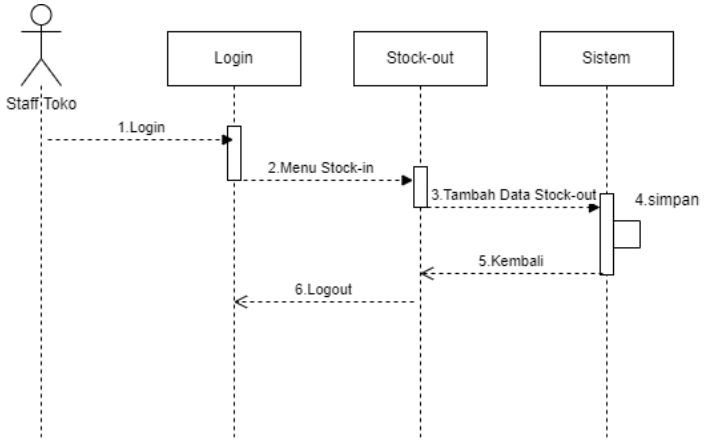

Figure 10. *Sequence diagram Stock-out*

2. Class Diagram

Diagram classes are called structure diagram types because they illustrate what should be present in a system modeled with various components [23]

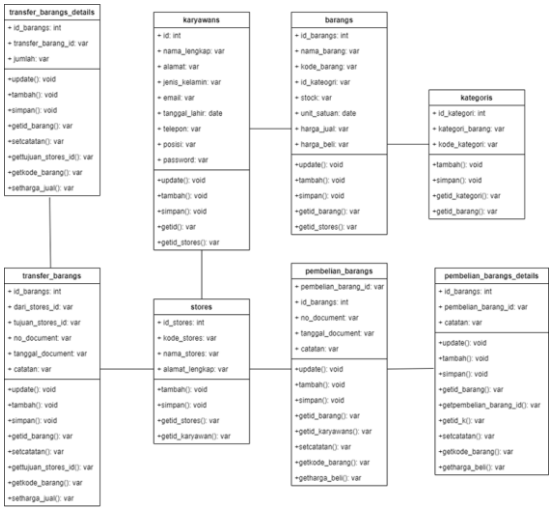

Figure 11. *Class Diagram*

3. Deployment Diagram

Deployment diagram is a diagram used to map software to processing nodes.[24]

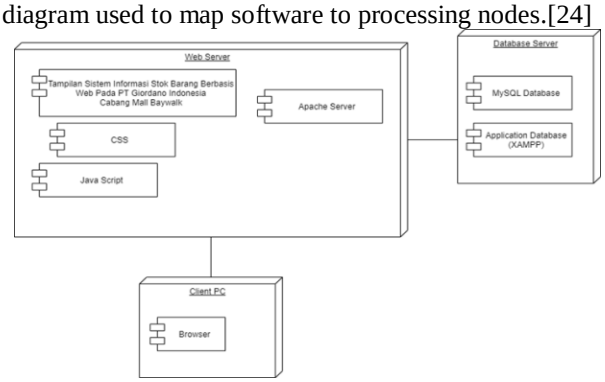

Figure 12. Deployment Diagram

4. Component Diagram

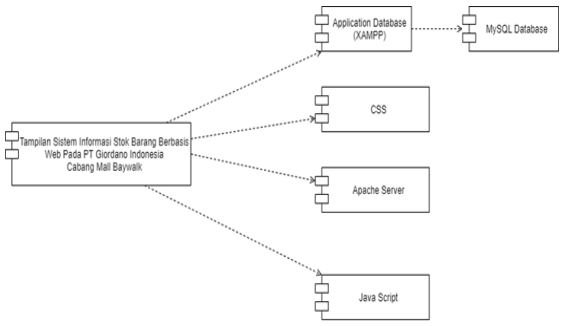

Figure 13. Component Diagram

F. User Interface

User Interface is the appearance of an application design that functions as an intermediary between the system and the user, where the UI display can be in the form of attractive colors, shapes and writing on the application [19]

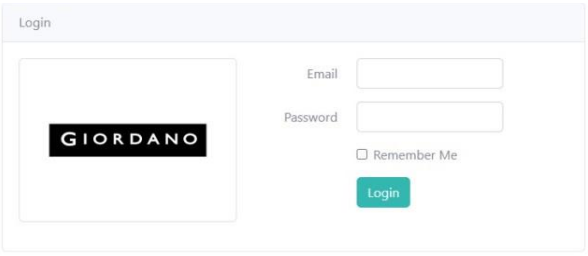

Figure 14 Login page

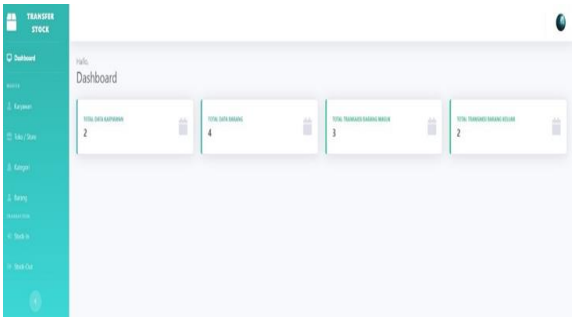

Figure 15 Staff dashboard page

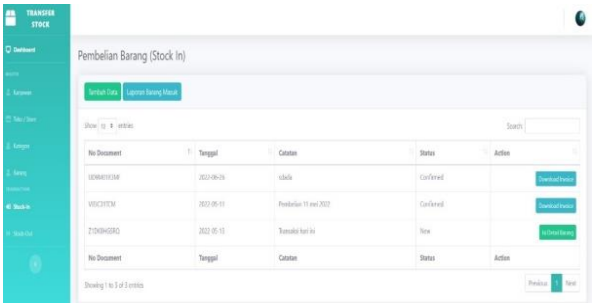

Figure 16 Stock-in Menu

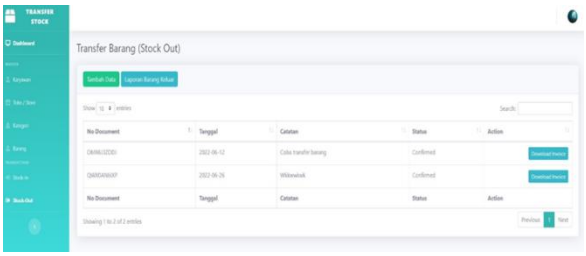

Figure 17 Stock-out Menu

G. Testing

Blackbox testing is one of the easy-to-use methods because it only requires a lower limit and an upper limit of the expected data [25]

Table 1 Blackbox testing login form test results

No	Test Scenarios	Test Case	Expected results	Test Results	Conclusion
1	Blank emails and passwords	Email (blank), password (blank)	View the notification, please fill in the data	As expected	Valid
2	Fill in only one form	Email(fill in) password(blank)	View the notification, please fill in the data	As expected	Valid
3	Enter the correct email and wrong password	Email admin123@gmail.com password wkwk	View the Incorrect email or password	As expected	Valid
4	Enter the correct email and correct password	Email admin123@gmail.com password wkwk	The system receives login access and goes to the dashboard page	As expected	Valid

Table 2 Blackbox testing item form test results

No	Test Scenarios	Test Case	Expected results	Test Results	Conclusion
1	There is data that has not been inputted	One of the data is blank	View the notification, please fill in the data	As expected	Valid
2	Fill in only one of the item data forms	Fill in all the data except the name of item	View the notification, please fill in the name of item	As expected	Valid
3	Inputted data completely as the forms	Complete inputted data	View the notification, the item data added successfully	As expected	Valid
4	Edit item data	Inputted as available forms	View the notification, the item data update successfully	As expected	Valid

Table 3 Blackbox testing Stock-in form test results

No	Test Scenarios	Test Case	Expected results	Test Results	Conclusion
1	Add the item data stock-in	One of the data is blank	View the notification, please fill in the data	As expected	Valid
2	Fill in only one of the forms for outgoing data	Fill in all the data except the date	View the notification, please fill in the date	As expected	Valid
3	Download the invoice of one of the incoming items	Click download invoice on one of the items	View the Invoice page	As expected	Valid
4	Print an incoming goods report	Click the incoming item report button	View the Print page of incoming goods report	As expected	Valid

Table 4 Blackbox testing Stock-out form test Results

No	Test Scenarios	Test Case	Expected results	Test Results	Conclusion
1	Add data stock-out	One of the data is blank	View the notification, please fill in the data	As expected	Valid
2	Fill in only one of the stock-out data forms	Fill in all the data except the date	View the notification, please fill in the date	As expected	Valid
3	Download the invoice for one of the outgoing items	Click download invoice on one of the items	View the Invoice page	As expected	Valid
4	Print a report on outgoing items	Click on the button Report for outgoing items	View the printed page of the report on outgoing items	As expected	Valid

4. Conclusion

Based on the discussion above, the author tries to conclude,

a. Application of Stock Information System Application in PT. Giordano Indonesia is an input for the development of existing procedures in the management system of PT. Giordano Indonesia. Giordano facilitates to find out the available stock and can correct weaknesses or deficiencies in the company..

b. The application of a computerized information system required by users to facilitate the viewing of inventory in the warehouse, the shipment and receipt of goods from other stores, and the printing of reports on goods issue and goods receipt data.

c. The improvement of services for application users must be complemented in the future by the addition of supply chain services

References

[1] S. Sufiyati and C. Gandawidjaja, "Jurnal Akuntansi Pada Perusahaan Dagang," *Pros. SENAPENMAS*, p. 471, 2021, doi: 10.24912/psenapenmas.v0i0.15029.

[2] M. Mukaram and I. S. Sarah, "Analisis Faktor Lingkungan Bisnis Ritel Berbasis Swalayan Pada Lab. Bisnis," *J. Ris. Bisnis dan Investasi*, vol. 2, no. 3, p. 85, 2017, doi: 10.35697/jrbi.v2i3.95.

[3] A. Ari Kristanto, Y. Harjoseputro, and J. E. Samodra, "Implementasi Golang Dan New Simple Queue Pada Sistem Sandbox Pihak Ketiga Berbasis REST API," *J. RESTI (Rekayasa Sist. dan Teknol. Informasi)*, vol. 4, no. 4, pp. 745–750, 2020.

[4] K. R. Karongkong, V. Ilat, and V. Z. Tirayoh, "Penerapan Akuntansi Persediaan Barang Dagang Pada Ud. Muda-Mudi Tolitoli," *Going Concern J. Ris. Akunt.*, vol. 13, no. 02, pp. 46–56, 2018, doi: 10.32400/gc.13.02.19082.2018.

[5] O. Pahlevi, A. Mulyani, and M. Khoir, "Sistem informasi inventori barang menggunakan metode object oriented di pt. Livaza teknologi indonesia jakarta," *Pt. Livaza Teknol. Indones. Jakarta*, vol. 5, no. 1Pahlevi, O., Mulyani, A., Khoir, M. (2018). Sistem Informasi Inventori Barang Menggunakan Metode Object Oriented Di Pt. Livaza Teknologi Indonesia Jakarta. Pt. Livaza Teknologi Indonesia Jakarta, 5(1), 27–35., pp. 27–35, 2018.

[6] T. Yusrizal, B. S. Hasugian, and A. Yasir, "Sistem Informasi Inventory Barang Pada Pt.Medan Smart Jaya Berbasis Web," *Device J. Inf. Syst. Comput. Sci. Inf. Technol.*, vol. 1, no. 2, pp. 45–58, 2021, doi: 10.46576/device.v1i2.1198.

[7] A. S. Vidianto and W. H. Haji, "Sistem Informasi Manajemen Proyek Berbasis Kanban (Studi Kasus: PT. XYZ)," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 7, no. 2, p. 283, 2020, doi: 10.25126/jtiik.2020701676.

[8] A. C. Wijoyo and D. Hermanto, "Analisis dan Perancangan Sistem Informasi Inventory pada PT Insan

Data Permata," *J. Ris. dan Apl. Mhs. Inform.*, vol. 1, no. 02, pp. 165–170, 2020, doi: 10.30998/jrami.v1i02.231.
[9] A. H. Saputra and A. Subiyakto, "Analisis dan Perencanaan Sistem…," vol. 2, no. 1, pp. 17–22, 2019.
[10] D. Iryaning, "Perancangan Sistem Informasi Inventori Gudang Berbasis Intranet," *J. Tek. Ind.*, vol. 9, no. 2, pp. 147–154, 2009, doi: 10.22219/jtiumm.vol9.no2.147-154.
[11] D. Sukrianto, "Penerapan Teknologi Barcode pada Pengolahan Data Pembayaran Sumbangan Pembinaan Pendidikan (SPP)," *Intra-Tech*, vol. 1, no. 2, pp. 18–27, 2017.
[12] A. Fauzi, N. Indriyani, and A. B. Hasta Yanto, "Implementasi Sistem Informasi Inventory Berbasis Web (Studi Kasus: Cv. Sinar Abadi Cemerlang)," *J. Teknol. Dan Open Source*, vol. 3, no. 2, pp. 144–157, 2020, doi: 10.36378/jtos.v3i2.781.
[13] R. Hidayat, S. Marlina, and L. D. Utami, "Perancangan Sistem Informasi Penjualan Barang Handmade Berbasis Website Dengan Metode Waterfall," *Simnasiptek*, pp. 176–183, 2017.
[14] A. Fauzi, N. Indriyani, and A. B. Hasta Yanto, "Implementation of Sales Information System of Indonesian Spices At Pt.Indo Rempah," *J. Teknol. Dan Open Source*, vol. 4, no. 1, pp. 01–07, 2021, doi: 10.36378/jtos.v4i1.1227.
[15] M Teguh Prihandoyo, "Unified Modeling Language (UML) Model Untuk Pengembangan Sistem Informasi Akademik Berbasis Web," *J. Inform. J. Pengemb. IT*, vol. 3, no. 1, pp. 126–129, 2018.
[16] Y. Handrianto and B. Sanjaya, "Model Waterfall Dalam Rancang Bangun Sistem Informasi Pemesanan Produk Dan Outlet Berbasis Web," *J. Inov. Inform.*, vol. 5, no. 2, pp. 153–160, 2020, doi: 10.51170/jii.v5i2.66.
[17] I. Akil, "Rekayasa Perangkat Lunak Dengan Model Unified Process Studi Kasus: Sistem Informasi Journal," *None*, vol. 12, no. 1, pp. 1–11, 2016.
[18] H. Trizaka, D. S. Rusdianto, and A. H. Brata, "Pengembangan sistem aplikasi persuratan elektronik berbasis web di fakultas ilmu komputer (FILKOM) Universitas Brawijaya," *J. Pengemb. Teknol. Inf. dan Ilmu Komput.*, vol. 3, no. 5, pp. 5115–5121, 2019, [Online]. Available: http://j-ptiik.ub.ac.id/index.php/j-ptiik/article/download/5424/2545
[19] E. S. 2) Dewi Laraswati 1), "IMPLEMENTASI SMS GATEWAY SEBAGAI SISTEM INFORMASI KEUANGAN SISWA (STUDI KASUS : SMP NEGERI 6 SINGINGI HILIR) Dewi," *J. Teknol. dan Open Source*, vol. 2, no. 1, pp. 65–73, 2019.
[20] U. Rahmalisa and Y. Yulisman, "Automatic Height and Weight Measurement Integrated Database System," *J. Teknol. Dan Open Source*, vol. 4, no. 2, pp. 248–253, 2021, doi: 10.36378/jtos.v4i2.1792.
[21] A. Darmayantie, "Desain Sistem Terfederasi Dengan Pendekatan Microservice Architecture Pada Kasus Studi Sistem Pelaporan Pajak," *J. Ilm. Inform. Komput.*, vol. 25, no. 1, pp. 50–63, 2020, doi: 10.35760/ik.2020.v25i1.2523.
[22] M. Rahmatuloh and M. Rizky Revanda, "Rancang Bangun Sistem Informasi Jasa Pengiriman Barang Pada Pt. Haluan Indah Transporindo Berbasis Web," *J. Tek. Inform.*, vol. 14, no. 1, pp. 54–59, 2022.
[23] Ismai, "Perancangan Sistem Aplikasi Pemesanan Makanan dan Minuman Pada Cafetaria NO Caffe di TAnjung Balai Karimun Menggunakan Bahasa Pemrograman PHP dan MySQL," *J. Tikar*, vol. 1, no. 2, pp. 192–206, 2020, [Online]. Available: https://ejurnal.universitaskarimun.ac.id/index.php/teknik_informatika/article/download/153/121
[24] N. A. Maiyendra, "Perancangan Sistem Informasi Promosi Tour Wisata Dan Pemesanan Paket Tour Wisata Daerah Kerinci Jambi Pada Cv. Rinai Berbasis Open Source," *Jursima*, vol. 7, no. 1, p. 1, 2019, doi: 10.47024/js.v7i1.164.
[25] N. M. D. Febriyanti, A. A. K. O. Sudana, and I. N. Piarsa, "Implementasi Black Box Testing pada Sistem Informasi Manajemen Dosen," *J. Ilm. Teknol. dan Komput.*, vol. 2, no. 3, pp. 1–10, 2021.