Instal : Jurnal Komputer

E-ISSN: 2808-683X
Edisi : Volume 17 Nomor 12 | Tahun 2026

Available online at https://journalinstal.cattleyadf.org/index.php/Instal/index

WEB-BASED COMPUTER SALES INFORMATION SYSTEM DESIGN TO IMPROVE TRANSACTION EFFICIENCY AT ONE COMPUTER STORE

Hindun [1], **Irwan** [2], **Darmeli Nasution** [3]
[1,2,3] Universitas Pembangunan Panca Budi

A R T I C L E I N F O

Keywords:

Perancangan, sistem informasi, penjualan, prototipe, web

ABSTRACT

One Computer Store, as a provider of computers, laptops, and other supporting devices, still faces challenges in managing sales transactions, such as manual recording processes, limited market reach, and suboptimal sales growth. This situation affects the efficiency of transactions and the store's competitiveness amid increasingly tight business competition. This research aims to design and build a web-based computer sales information system that is capable of increasing transaction efficiency, expanding the market through online sales, and promoting sales growth. The system development method used is the Prototype model, which includes the stages of requirements analysis, system design, implementation, and testing. The system developed provides key features such as product data management, online sales transactions, customer data management, as well as automatic and real-time sales report generation. The results of the study indicate that the web-based information system designed can assist One Computer Store in improving transaction efficiency with faster and more accurate record-keeping, expanding market reach through internet-based access, and supporting increased sales volume. With this system, One Computer Store has a greater opportunity to improve its business competitiveness in digital literacy.

Corresponding Author:
Hindun
Universitas Pembangunan Panca Budi
Email: hindunindun1234@gmail.com

PENDAHULUAN

The development of information technology in the digital era has driven significant changes in the business and trade world. Conventional systems that still rely on manual record-keeping and face-to-face transactions are now considered inefficient and unable to meet the challenges of increasingly intense market competition. The use of web-based information systems has become one of the strategic solutions to increase operational efficiency, expand market reach, and drive sales growth [1].

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

One Computer Store, as a business engaged in selling computers, laptops, and other supporting devices, still faces several operational challenges. Manual transaction processes often cause issues such as service delays, recording errors, and difficulties in preparing sales reports. Furthermore, the limitations of the existing system mean the store can only reach consumers in the nearby area, restricting opportunities to expand the market. This affects sales growth, which has not yet reached its full potential.

By designing a web-based computer sales information system, One Computer Store can gain various benefits. First, this system can improve transaction efficiency with fast, accurate, and integrated recording processes. Second, a web-based system allows products to be marketed online, thereby expanding market reach without being limited by space and time. Third, broader market access will impact increased sales volume and the store's competitiveness. In addition, sales reports can be generated automatically and in real-time, making it easier to manage the business and make managerial decisions.

Thus, research on the Design of a Web-Based Computer Sales Information System to Improve Transaction Efficiency, Expand the Market, and Increase Sales at One Computer Store becomes very relevant. This research is expected to provide an information system capable of meeting the store's operational needs while also serving as a business development strategy to become more competitive in the digital era.

METODE

1. Prototype Model

A Prototype Model is a system development methodology in which an early and partial version of the system, called a prototype, is quickly created, tested, and refined through a series of iterations with user feedback [2]. The main goal of this model is to reduce uncertainty and misunderstandings between developers and users regarding system requirements, especially when these requirements are difficult to define at the beginning of the project. The following are the stages involved in the Prototype Model [3]:

a. Basic Requirements Gathering
   This stage is carried out to obtain a general overview of the system desired by the user. The researcher meets with the owner of One Computer store to understand the ongoing sales system and listen to what the owner wants to improve transaction efficiency. Then, the researcher tries to propose a system. The general objectives of the system, required features, and which parts will become prototype areas are identified. Specific details about input, process, and output that are difficult to define are temporarily ignored because they will be explored through the prototype.
b. Rapid Prototype Development
   Based on basic requirements, developers build an initial working model of the system. This prototype usually focuses on the user interface (UI) and the key features visible to the user. The prototype is created quickly and often uses rapid application development (RAD) tools without prioritizing code efficiency or high-level security.
c. User Evaluation
   The completed prototype is then presented and tested to be evaluated according to user needs. Users operate the prototype and provide feedback on functionality, usability, and what needs to be changed, added, or removed. The developers record all input and requested changes.
d. Refining and Iteration
   Developers use user feedback to improve and modify the prototype. If changes are needed, developers return to Stage 2, modify the prototype as requested, and this process repeats until users are fully satisfied with the system's working model. This evaluation-improvement cycle ensures that the final system truly reflects user needs.

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

e Final Product Implementation
After the prototype is approved, the actual system development begins. The approved prototype (or often, the prototype is discarded and the code is rebuilt from scratch based on the prototype specifications) is developed into the final product with high quality, security, and efficiency. The final system is tested, implemented, and maintained.

2. Metode Pengumpulan Data

In this research completion, data collection was carried out before designing a web-based sales information system at One Computer store. The methods of data collection used are as follows [4]:

a. Observation
Direct observation was conducted to understand the ongoing sales system process, and to conclude what the problem formulations are at One Computer store. It also identifies who is involved in the sales process, how the payment system works, and who the customers purchasing the products are.

b. Interview
Interviews were conducted to collect supporting data according to the system's needs, through direct question-and-answer sessions with the parties responsible for managing sales at One Computer store.

c. Literature Study
This technique aims to collect data through various relevant reference sources outside the research site, to assist in the completion of this study. The reference sources for literature review are conducted by reading books, journals, learning modules, the internet, and other media sources based on the system's needs.

3. System Design

System design is created to model how the system to be developed will look according to the requirements. The information system design is created to visualize it using UML (Unified Modeling Language) models.

a. Use Case Diagram Design
A use case diagram represents the functions of an information system and the interactions between users and the sales information application system, illustrating the sequence of activities that a user can perform to open or operate the application system, enter data, and process data to generate information. The design of the web-based sales information system use case diagram at One Computer store can be seen in Figure 1 below [5].

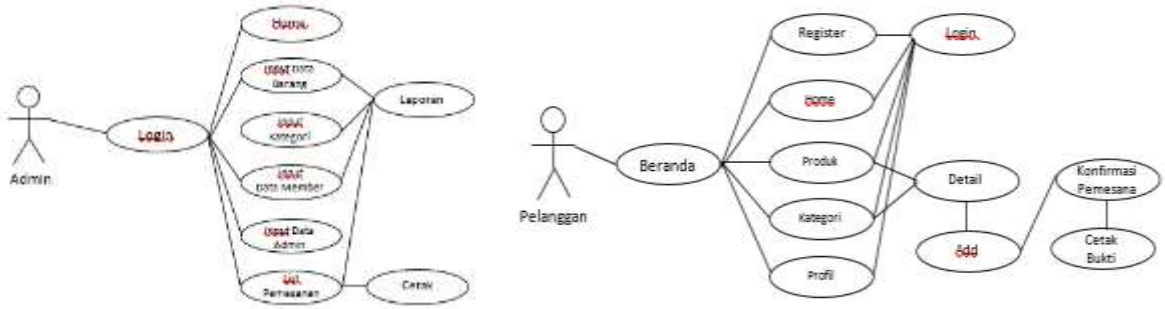

Figure 1. Use case diagram of the sales system for One Computer store

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

b. Sequence Diagram Design

A sequence diagram is a depiction that explains the relationship between objects with each other over a certain period of time and the actions in the system that occur when objects send messages to each other, when the messages are sent, and when the messages are executed. The design of the sales information system at the One Computer store can be seen in Figure 2 as follows [6].

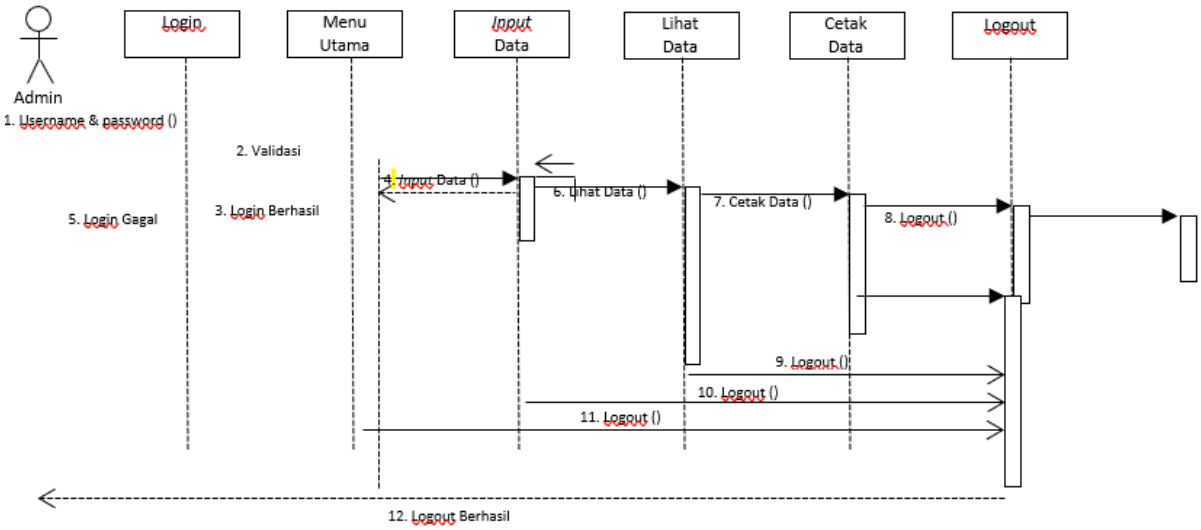

Figure 2. Sequence diagram of the sales system for One Computer store

c. Activity Diagram Design

An activity diagram is a diagram that illustrates the flow of procedural logic and explains the direction of activities carried out by users of the sales system at One Computer store, which can be seen in Figure 3 below [7].

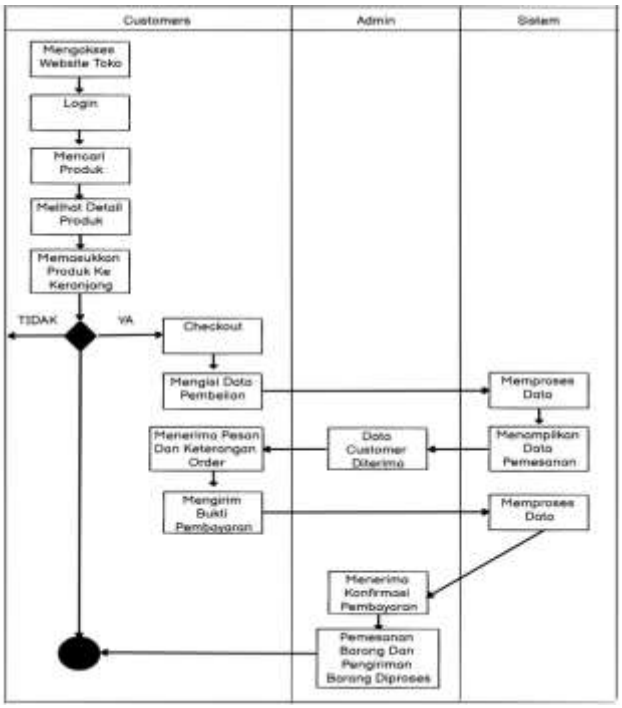

Figure 3. Activity Diagram of the sales system at One Computer store

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

d. Class Diagram Design

A class diagram is a diagram of the system's database structure based on the classes that have been analyzed and defined. The classes in the structure must be capable of performing functions according to the system's requirements. Figure 4 shows the class diagram design for the One Computer store as follows [8].

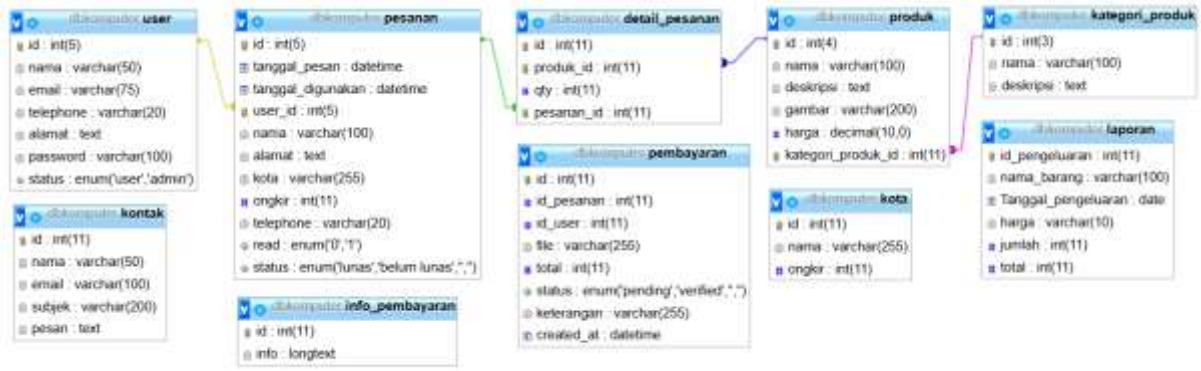

Figure 4. Class Diagram of the sales system at One Computer store

RESULTS AND DISCUSSION

This section presents the results of the system requirements analysis, the design of a web-based computer sales information system to improve transaction efficiency at One Computer store, which will be described as follows:

1. Admin User System Interface

An admin is a user responsible for managing, maintaining, and ensuring the daily operations of the store run smoothly within the system. The admin user interface consists of the following [9]:

a. Login Form Page

The admin login page is the initial screen that will appear when opening the URL of the web-based computer sales information system at One Computer store, which consists of an input form for email and password.

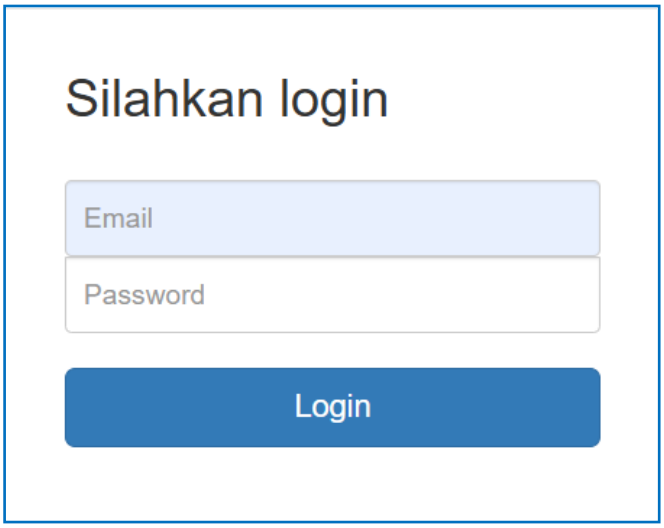

Figure 5. Admin login page

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

b. Home Menu Page

This is the main display that appears when login is successful. The home menu page provides information about the admin as the system user and displays several menus such as Master Data, Reports, Orders, Payments, Contacts, and Logout [10].

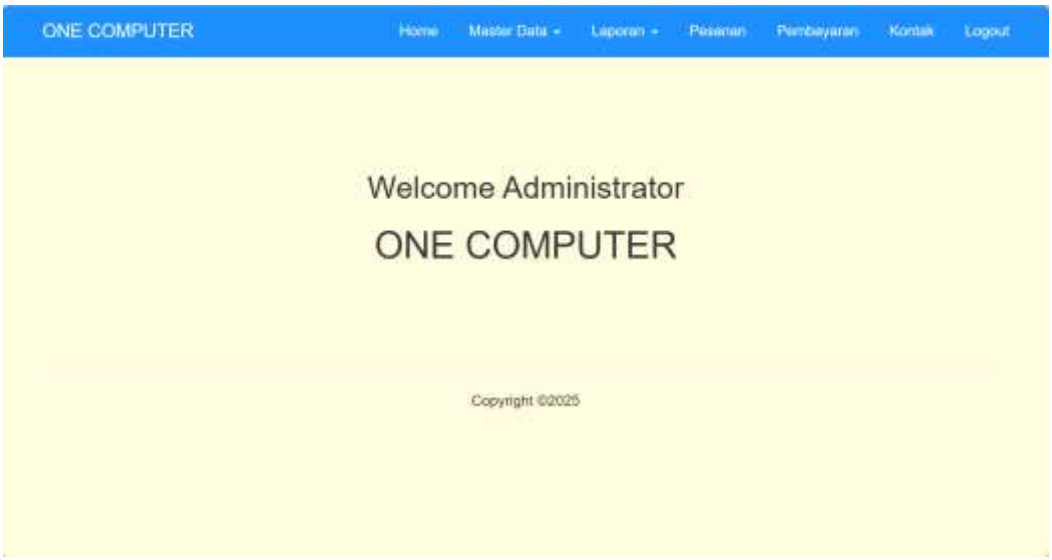

Figure 6. Admin Home Menu Page

b. Master Data Menu Page

The Master Data Menu has several submenus, namely Product Category Data, Product Data, User Data, and Shipping Cost. Each submenu displays its page and functions as explained below:

- Product Category List Page

  This page is for grouping the products sold at One Computer store into three product categories, namely computers, laptops, and computer peripherals. The aim is to make it easier for customers to find the products they want.

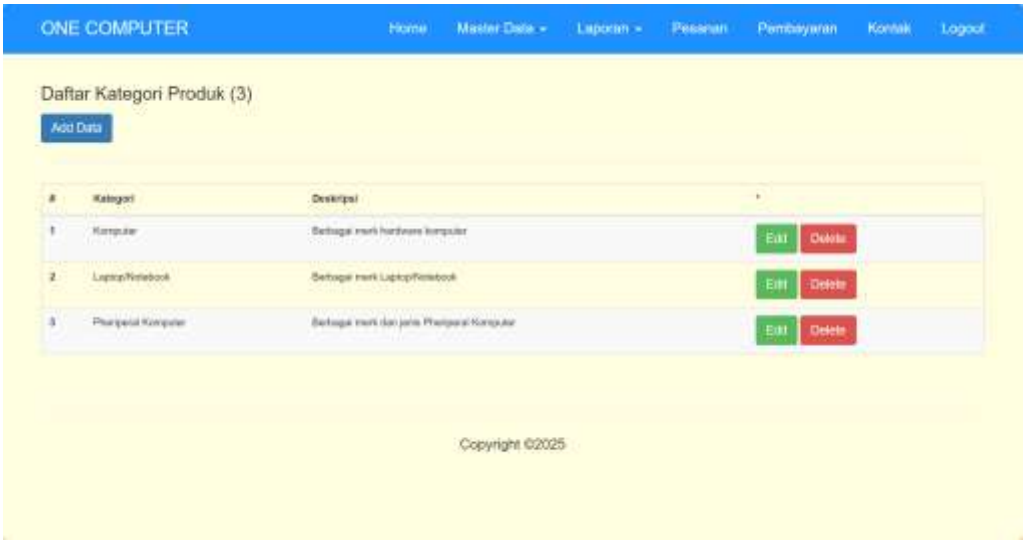

Figure 7. Product Category List Page

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

- Product Data Page
  This page is used to input product data according to the product category sold at the One Computer store. To input product data, you can click Add Data and then fill out the product data form.

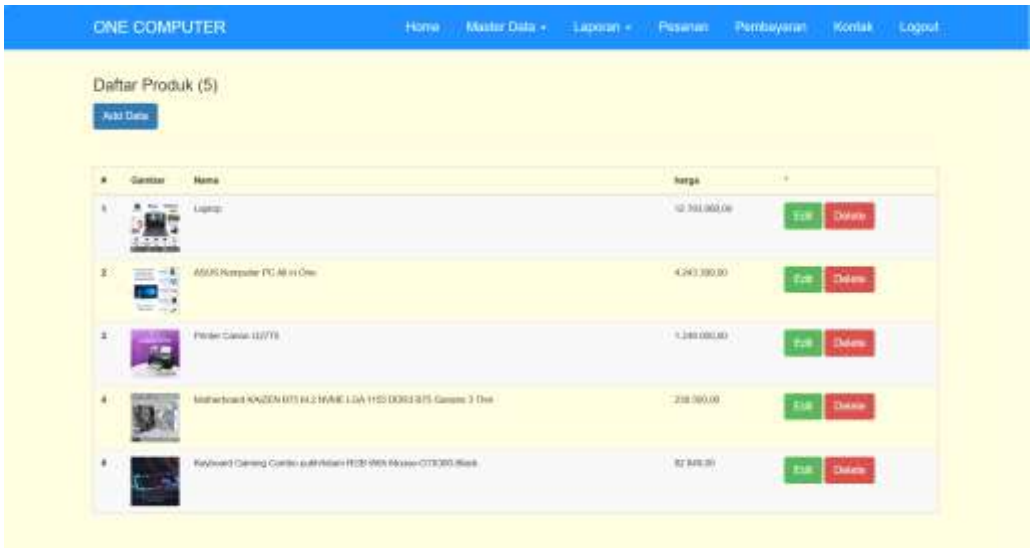

Figure 8. Product Data Page

2. Customer User System Interface
   Customers are end users who interact with the system to search for, select, and purchase computer products offered. The Customer User System interface includes several menus such as Home, Product Gallery, Contact Us, Payment Info, Login, and Registration.
   a. Home Menu Page
   The home menu page will appear when customers visit the One Computer store's website URL, as shown in the image below.

Figure 9. Customer Home Menu Page

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

b. Product Gallery Page

The product gallery is a page that displays all the information about the products available at One Computer store and can show products based on product category menus. Customers can place orders for products by clicking the order button on the desired product..

Figure 10. Product Gallery Page

CONCLUSION

The results of the research on the design of a web-based computer sales information system at One Computer store. The author can draw the following conclusions:

1. The web-based sales information system at One Computer store can help expand the market and boost computer sales anywhere and anytime without being restricted by distance or time.
2. With the web-based computer sales information system, customers can obtain information about the various products they need, as well as availability and prices at One Computer store, without having to visit the store and saving time.
3. The web-based sales information system greatly helps One Computer store in managing, recording sales, preparing product sales reports, and improving transaction efficiency.
4. One Computer store can store data of customers who visit the website, which can later be used to provide information and promotional product prices.
5. There needs to be regular promotions carried out by One Computer store through various mass media.

REFERENCES

[1] A. Khumairoh., Irwan., D. Nasution. Sistem Penjualan Online Material Bangunan Berbasis Website Pada UD Pincuran Jaya. J. Mahajana Informasi. Vol.10 No.1, 2025. DOI: https://doi.org/10.51544/jurnalmi.v10i1.6095

[2] D. Meisak, Hendri, and S. R. Agustini, "Penerapan Metode Prototype Pada Perancangan Sistem Informasi Penjualan Mediatama Solusindo Jambi," STORAGE J. Ilm. Tek. dan Ilmu Komput., vol. 1, no. 4, pp. 1–11, 2022, doi: 10.55123/storage.v1i4.1066.

[3] Rokhim, A., & Arif Darmawan, S. (2020). Implementasi Metode Prototype Untuk Aplikasi Android Monitoring Kuliah Kerja Nyata Pada Stmik Yadika Bangil". Nopember, 12(2), 7–16.

Page : 788-796
https://doi.org/10.54209/jurnalinstall.v17i12.468

[4] Hendry, Eka Putra, Muhammad Zen, Supiyandi, Chairul Rizal, "Perancangan Aplikasi Surat Perintah Perjalanan Dinas (SPPD) Responsive with Bootstrap Berbasis Web," J. Ilmu Perpust., vol. 6, no. 3, pp. 411–420, 2017, [Online]. Available: https://ejournal3.undip.ac.id/index.php/jip/article/view/23173.
[5] Abdillah, R. (2021). Pemodelan Uml Untuk Sistem Informasi Persewaan Alat Pesta. Jurnal Fasilkom, 11(2). https://doi.org/10.37859/jf.v11i2.2673
[6] M. Farhan and P. Handayani, "Perancangan Sistem Informasi Penjualan Pakaian Berbasis Web Pada CV. Cahaya Baru Jakarta," J. Ilmu Komput. dan Sist. Inf., vol. 7, no. 1, pp. 100–111, 2024, doi: 10.55338/jikomsi.v7i1.2596.
[7] Arpan., D. Yudistia., Shendy., Wafi, D. Fathanah. (2023). Pembuatan Website Program Studi Akuntansi Universitas Pembangunan Panca Budi Medan Dengan Menggunakan Codeigniter 3. Jurnal Nasional Teknologi Komputer, Vol. 3 No. 3.
[8] Rizky, A. A., & Ramdhani, I. (2019). Perancangan Sistem Informasi Perekrutan Karyawan Berbasis Web Menggunakan PHP dan MySQL DI PT. Ria Indah Mandiri. J. Manaj. Inform, 9(1), 49-57.
[9] Maydianto, (2021). Rancang Bangun Sistem Informasi Point of Sale Dengan Framework Codeigniter Pada CV Powership, "J. Comasie, Vol.4 No.2, pp.50-59.
[10] Zen, Muhammad., Wijaya, Rian Farta., Irwan. (2022). Development of Student Attendance Information System at SMK Negeri 9 Medan. International Conference on Sciences Development and Technology, Vol 2 No 1
[11] Gamaliel, F., Arliyanto, P. Y. D., & Sulistyaningtyas, F. (2021). Pelatihan Basis Data Mysql Tingkat Dasar Kepada Masyarakat (Sma/Smk/Sederajat) Melalui Live Streaming Zoom. Jurnal Pengabdian Masyarakat Bumi Raflesia, 4(3), 646–652. https://doi.org/10.36085/jpmbr.v4i3.2070