

## **Designing a Web-Based Accounting Information System Using the Object Oriented Analysis and Design Method**

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### **ABSTRACT**

The development of information technology in the digital era has created many new efficient applications. With the development of computer technology as a means of processing data into information which is then processed again in such a way in its presentation. Perum BULOG is one of the state-owned companies engaged in rice logistics and food security. As a company that continues to carry out public duties from the government, BULOG in carrying out activities that can stabilize the basic purchase price for grain, stabilize prices, especially basic prices, distribute rice for the poor (Raskin) and manage food stocks. This research aims to optimize the process of purchasing food and distributing computerized social assistance. The development method used in making this system is the Object Oriented Analysis and Design (OOAD) method which can model objects in the system, in the context of AIS, objects such as "accounts, transactions" can be represented as objects in the OOAD model. The results showed that the sales and distribution activities of social assistance are increasingly managed according to the needs equipped with a transaction process that can be stored.

**Keywords:** Accounting Information System; Object Oriented Analysis and Design; Web

### **1. INTRODUCTION**

The development of information technology in the digital era has created many new, efficient applications (Habibi et al., 2022). With the development of computer technology as a means of processing data into information which is then processed again in such a way in its presentation (Chandra & Poerbo, 2019). Every company is required to have an information system related to the sales they make, but unfortunately on the other hand there are still many entrepreneurs who do not use information systems for company management (Putri et al., 2023).

Accounting information system is a collection of recording processes, processing financial information from various transactions that have been carried out to produce financial related information that can help decision making (Suendri & Haq, 2023). Accounting information systems have a very important role (Tryana et al., 2022). As a basis for decision making, an accounting information system provides information for the needs of management (Mia et al., 2021).

The design of this web-based accounting information system aims to optimize the computerized food purchasing process (Moch Zawaruddin Abdullah et al., 2021). Information technology optimization can be defined as the attitude and behavior of accountants in using information technology to complete tasks and to improve their performance. Information technology has penetrated and changed various aspects of life, so it is undeniable that information technology can also increase the effectiveness of AIS (Kumalasari et al., 2023).

At this time the sales report system at Bulog Rantauprapat still uses recording in the ledger so that researchers find problems which allow sales data processing errors to occur, and in poor data storage, data storage is often forgotten. Experience a long time in searching for sales data and making reports because they still see data in the sales book (Vidiasari & Darwis, 2020).

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In the above problems, an accounting information system is needed that suits the needs of the company, researchers will focus on Bulog Rantauaprat, a state-owned public company engaged in food logistics, which has the slogan "Together realizing food sovereignty" (Utama et al., 2020). The method used to design the information system is the Object Oriented Analysis and Design (OOAD) method. OOAD is a method of making requirements from the point of view of object classes based on concepts encountered in the scope of problems in the real world (Rahmawati et al., 2022). This method is a method that uses objects and classes as the main concept and builds the main general principles for analysis and design. This method has several objectives, namely: (1) establish system requirements; (2) produce system designs without significant uncertainty; (3) understand the system, its context, and the conditions for its implementation (Cristian & Meutia, 2022).

Furthermore, the benefit of this research is to produce an accounting information system that can calculate food purchase reports accurately and quickly, for technological changes as well, namely changes from using excel applications to using sales application programs (Muthia et al., 2019).

Based on the results at the analysis stage later, the functional requirements regarding the accounting system that is suitable for Bulog Rantauaprat will be known. Seeing the results of the analysis, a system design will then be made and integrated with existing financial data, so that the results are obtained in the form of an Accounting Information System website in Bulog Rantauaprat (et al., 2020).

## 2. LITERATURE REVIEW

Eka (2022) with research on Analysis of Existing Sales Accounting Information Systems at Perum Bulog Divre Bengkulu aims to find out and analyze the existing cash sales system at Perum Bulog Divre Bengkulu with the theory of cash sales accounting system according to Mulyadi. The data collection method uses field research, namely by directly reviewing the company by means of observation, interviews and documentation. This type of research uses descriptive comparative, while the analysis method used is the comparative method. The difference lies in the object used as a research site and research time. (Sari et al., 2022). Nurlailatul (2019) research on Sales Accounting Information System Analysis in Efforts to Increase the Effectiveness of Internal Control aims to find out how the implementation of the sales accounting information system and the implementation of the Sales Accounting Information System in an effort to increase the effectiveness of internal control at Perum BULOG Sub Divre Kediri. This type of research is a case study. Data obtained through observation, interviews and documentation. The difference lies in the object of the place and time of research (Fitriyah & Pertiwi, 2019). Fransiska (2023) research on Web-Based Goods Inventory Information System (Case Study of Perum Bulog Ende Branch Office) aims to design a web-based goods inventory information system. The SDLC or (waterfall) model is often called the linear secunsial model. The method used in this research is a descriptive qualitative research method by conducting research into the field. The difference is the object and time of research and the development method (Lendu et al., 2023).

## 3. METHOD

### 3.1 OOAD Method

This research uses OOAD, which is a method that analyzes and examines the needs of classes and objects raised in the context of a problem that produces software architecture based on manipulation of system objects or system parts. OOAD has object relationships with entities in general, which can be mapped exactly like the real world state and system interactions.

### 3.2 System Development Method

The Waterfall method is applied to research that is structured in building a software. Below are the stages of this method such as the waterfall model as follows:

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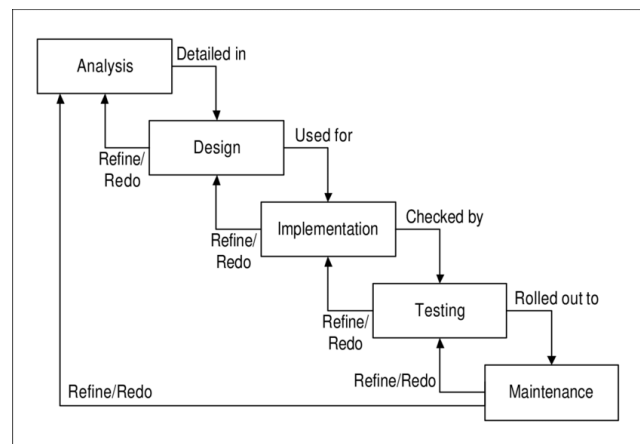


Fig.1 Waterfall System Development

1. System Analysis: This stage collects information through field research, making observations and asking questions directly to employees.
2. System Design: After getting the right information, at this stage a development is carried out by making a design, the design includes system design, database, system flow and system output that you want to make.
3. System Implementation: At this stage using an application of what is done, the application of this design uses a programming language, namely visual studio code and xampp.
4. System Testing: This stage carries out the system testing process, whether the system made can run well according to the planned system.
5. System Maintenance: This stage is maintenance on the system that has been made, as well as making the latest developments including making improvements if there are errors in the system that has been made.

### 3.3 Data Collection Method

This research uses qualitative data collection methods the data that has been collected both in oral and written form and can contribute. Below are the data collection techniques that will be carried out by researchers as follows:

1. Observation: This stage is carried out directly about how the system process is running at the Perum Bulog Kansilog Rantauprapat office while recording various information related to the system process to be created.
2. Interview: This stage is carried out face-to-face question and answer activities to employees of the Perum Bulog Kansilog Ranatauprapat office to obtain data and information related to the needs required in system development.
3. Literature Study: This stage conducts reference search activities from various sources and conducts literature reviews of journal articles, books, scientific papers, sources from the internet related to research topics.

## 4. RESULT

### 4.1 Use Case Diagram

The use case diagram shows that there are two different roles, namely admin and manager, where each role has a unique and specific action or action.

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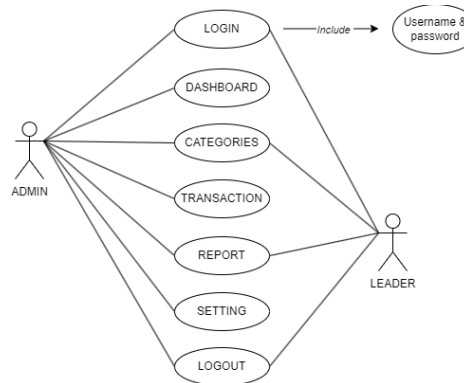


Fig. 2 Use Case Diagram

The use case diagram in the figure above explains what actors can do on the system to be built. The design of this accounting information system has 2 users where there is an admin and a manager. Admins on this system can perform the process of adding, deleting and editing sales data and outgoing social help. And the manager can see the data input as well as proof of payment and distribution of outgoing social help

**4.2 Flowchart**

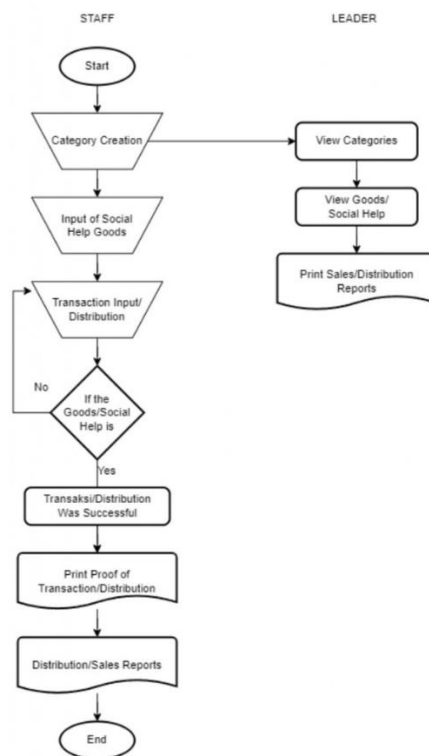


Fig. 3 Flowchart

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This flowchart describes the flow of how to carry out the process of entering data of goods and bansos data in the design of building a web-based accounting information system using the method of object oriented analysis and design. In this flowchart it will be seen how the admin processes as the manager of the application. Where the process starts from the user login then enters the data according to the needs desired by the user.

## 5. DISCUSSIONS

The display below is the implementation of the application:

### a. Login Page

This page displays the login page, which is implemented for admins and leaders to have access to the system.

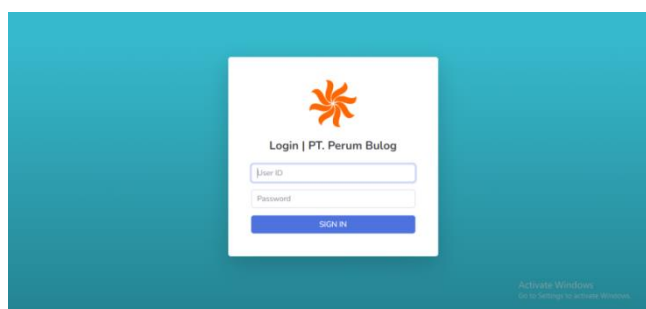


Fig. 4 Login Page

### b. Admin Dashboard Page

On this page displays a dashboard page that functions to display information on the dashboard that can be managed by the admin, enter data and process transactions.

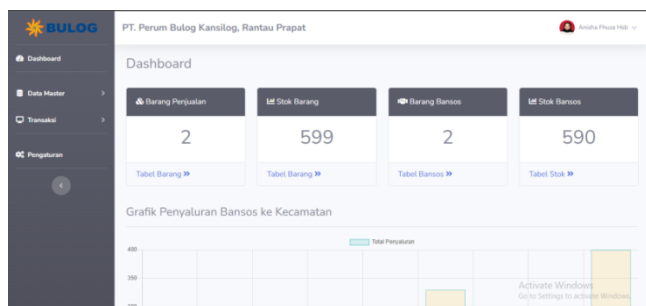


Fig. 5 Admin Dashboard Page

### c. Leader Dashboard Page

On this page displays the manager's dashboard page which can only view sales and social assistance distribution reports.

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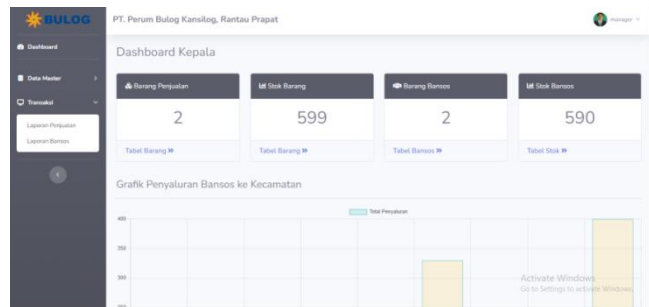


Fig. 6 Leader Dashboard Page

d. Sales Item Data Page

On this page displays stock items that can be sold. Which can only be managed by admin

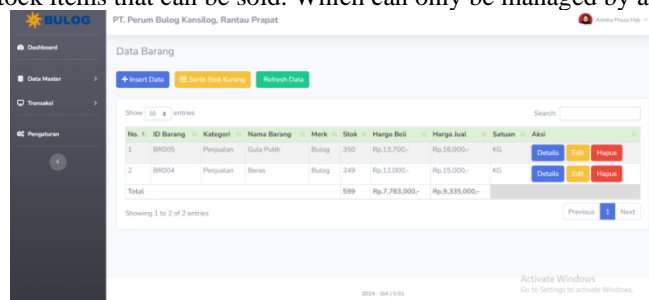


Fig. 7 Item Data Page

e. Social assistance data page

This page displays the stock of social assistance that will be distributed to the community which can only be managed by the admin.

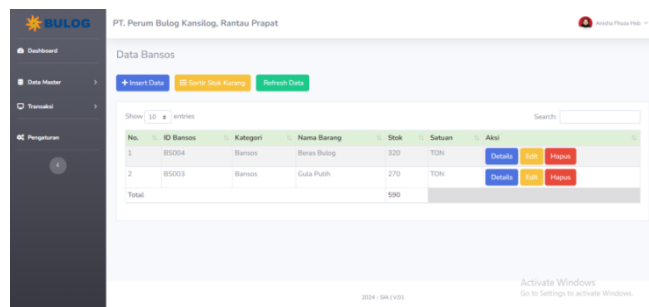


Fig. 8 Social assistance data page

f. Sell Transaction Page

On this page displays sales transactions accompanied by printed proof of payment transactions that can only be managed by admin.

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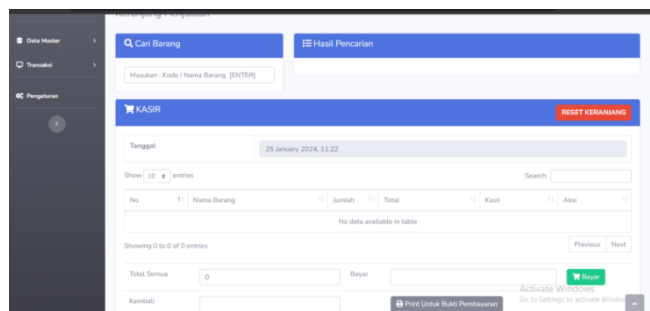


Fig. 9 Selling Transaction Page

g. Social assistance distribution page

This page displays the process of distributing social assistance that will be distributed in various sub-districts in abuhanbatu with proof of distribution that can only be managed by the admin.

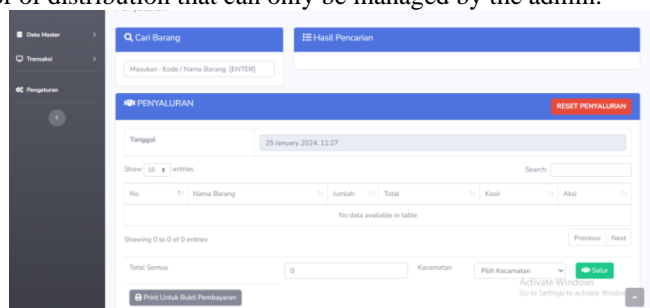


Fig. 10 Social assistance distribution page

h. Sales Report Page

On this page displays sales data that is successfully sold every month and is accompanied by excel data that can be saved can be managed by admin and branch leaders.

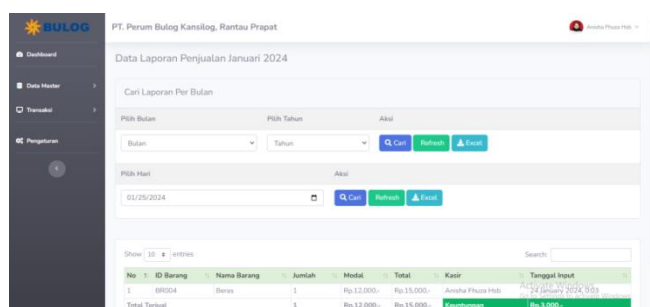


Fig. 11 Sales Report Page

i. Social Assistance Report Page

On this page can display social assistance reports that have been distributed to various sub-districts in labuhanbatu. And display graphics on the dashboard.

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No	ID Beros	Nama Beros	Jumlah	Kecamatan	Kasir	Tanggal Input
1	80003	Gula Putih	100	Rantau Utara	Anisha Phaza Hub	24 January 2024, 1.26
2	80004	Beras Bulog	300	Rantau Utara	Anisha Phaza Hub	24 January 2024, 1.26
3	80003	Gula Putih	80	Pasar Tengah	Anisha Phaza Hub	24 January 2024, 1.21
4	80004	Beras Bulog	250	Pasar Tengah	Anisha Phaza Hub	24 January 2024, 1.21
5	80003	Gula Putih	50	Pasar Hulu	Anisha Phaza Hub	24 January 2024, 1.17
6	80004	Beras Bulog	130	Pasar Hulu	Anisha Phaza Hub	24 January 2024, 1.17
7	80003	Gula Putih	25	Pasar Hilir	Anisha Phaza Hub	24 January 2024, 1.14
8	80004	Beras Bulog	100	Pasar Hilir	Anisha Phaza Hub	24 January 2024, 1.14
9	80003	Gula Putih	40	Pangkatian	Anisha Phaza Hub	24 January 2024, 1.13
10	80004	Beras Bulog	140	Pangkatian	Anisha Phaza Hub	24 January 2024, 1.13
Total Terjual			1730			

Fig. 12 Social Aid Report Page

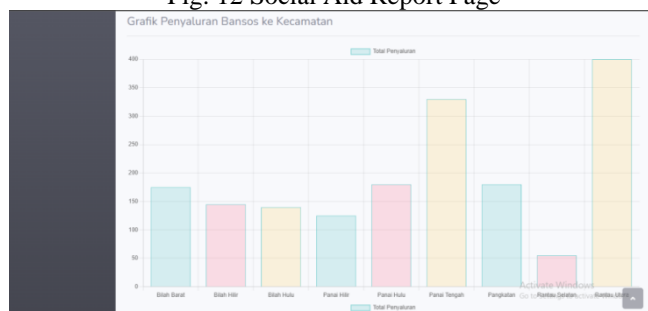


Fig. 13 Social assistance distribution graph page

## 6. CONCLUSIONS

From the research results described earlier, it can be concluded that this system is a web designed according to the needs of Perum. Bulog Rantauprapat which can make it easier for users to make work more effective and efficient and of course expect a system in order to determine system performance. Sales and distribution activities of social assistance are increasingly managed according to the needs equipped with a transaction process that can be stored. This accounting information system is an innovative step taken to improve the performance of Perum Bulog Rantauprapat and optimize information and communication technology.

## 7. REFERENCES

- K., Hadad, S. H., & Samad, A. (2020). Sistem Informasi Data Beras pada Kantor Perum Bulog Sub Divre Wilayah I Ternate. *Jurnal Ilmiah ILKOMINFO - Ilmu Komputer & Informatika*, 3(1), 35–42. <https://doi.org/10.47324/ilkominfo.v3i1.85>
- Chandra, B., & Poerbo, H. (2019). *SISTEM INFORMASI AKUNTANSI BERBASIS WEB PADA* Keywords : *dapat mengakses informasi dimana saja dengan cepat dan efisien . Penerapan teknologi ini informasi kepada masyarakat . Sistem berbasis website banyak diterapkan pada perusahaan ( PJTKI ). PJTKI adala. 2*, 139–156.
- Cristian, L., & Meutia, D. (2022). Sistem Informasi Akuntansi Pembelian Bahan Baku untuk Proyek. *ComTech: Computer, Mathematics and Engineering Applications*, 3(1), 118. <https://doi.org/10.21512/comtech.v3i1.2390>
- Fitriyah, N., & Pertiwi, D. A. (2019). Analisis Sistem Informasi Akuntansi Penjualan dalam Upaya Meningkatkan Efektivitas Pengendalian Intern ( Studi Pada Perum BULOG Sub Divre Kediri ) PENDAHULUAN Informasi akuntansi merupakan salah satu dasar dalam pengambilan keputusan , untuk mendapat info. *JFAS: Journal of Finance and Accounting Studies*, 1, 114–123.
- Habibi, I., Nurhakim, H., & Rosalina, R. R. (2022). Perancangan sistem informasi akuntansi penjualan tunai pada konveksi Zunrock dengan vb.net metode RAD. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, 5(2), 1127–1137. <https://doi.org/10.32670/fairvalue.v5i2.2061>

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- Kumalasari, P. D., Widhiastuti, N. L. P., & Dewi, N. L. P. S. (2023). Partisipasi Manajemen Memoderasi Optimalisasi Teknologi Informasi Pada Efektivitas Sistem Informasi Akuntansi. *Jurnal Akuntansi Terapan Dan Bisnis*, 3(1), 42–48. <https://doi.org/10.25047/asersi.v3i1.3975>
- Lendu, F. T. M., Tute, K. J., & Radja, M. (2023). *Sistem Informasi Persediaan Barang Berbasis Web ( Studi Kasus Perum Bulog Kantor Cabang Ende )*. 7, 18139–18147.
- Mia, S., Abdillah, R., & Cahyo, A. (2021). Pemodelan Uml Untuk Sistem Informasi Persewaan Alat Pesta. *Jurnal Fasikom*, 11(2), 79–86. <https://doi.org/10.37859/jf.v11i2.2673>
- Moch Zawaruddin Abdullah, Mungki Astiningrum, Yuri Ariaynto, Dwi Puspitasari, & Atiqah Nurul Asri. (2021). Rancang Bangun Sistem Informasi Akuntansi Berbasis Website menggunakan Framework Laravel. *Jurnal Pengabdian Polinema Kepada Masyarakat*, 8(1), 74–80. <https://doi.org/10.33795/jppkm.v8i1.64>
- Muthia, N., Amalia, H., Puspita, A., & Lestari, A. F. (2019). Rancang Bangun Sistem Informasi Akuntansi Penjualan Dengan Model Waterfall Berbasis Java Desktop. *JITK (Jurnal Ilmu Pengetahuan Dan Teknologi Komputer)*, 5(1), 15–22. <https://doi.org/10.33480/jitk.v5i1.582>
- Putri, R. A., Alfiansyah, A., Muliani, A., & Keuangan, L. (2023). *Sistem informasi akuntansi pada ud. lian fil kabupaten padang lawas*. 6, 3937–3947.
- Rahmawati, D., Gufran, R., & Komalasari, N. (2022). Perancangan Sistem Informasi Pembukuan UKM Konveksi Bim Collection Berbasis Website Dengan Metode OOAD. *Jurnal Teknik Informatika Unis*, 10(2), 127–135.
- Sari, E., Hidayah, N. R., Akuntansi, P. S., Ekonomi, F., & Bengkulu, U. D. (2022). *Analysis of Sales Accounting Information Systems in Perum Bulog Divre Bengkulu Analisis Sistem Informasi Akuntansi Penjualan Yang Ada Di Perum Bulog Divre Bengkulu*. 1(1), 7–18.
- Suendri, S., & Haq, K. (2023). Implementasi Metode Accrual Basis Pada Sistem Informasi Keuangan. *Journal of Information System Research (JOSH)*, 4(2), 562–568. <https://doi.org/10.47065/josh.v4i2.2924>
- Tryana, A., Damayanti, S., & Purwanto, H. (2022). Rancang Bangun Sistem Informasi Persediaan Bahan Bangunan Berbasis Website di Tb. Gilang Putra. *Jurnal Dimamu*, 2(1), 97–108. <https://doi.org/10.32627/dimamu.v2i1.668>
- Utama, A., Hamzah, M. L., Saputra, E., & Sutoyo, S. (2020). Rancang Bangun Sistem Informasi Data Penjualan Motor Menggunakan Metode Object Oriented Analysis And Design Dengan UML Modelling. *INTECOMS: Journal of Information Technology and Computer Science*, 3(1), 40–51. <https://doi.org/10.31539/intecom.v3i1.1294>
- Vidiasari, A., & Darwis, D. (2020). Perancangan Sistem Informasi Akuntansi Penjualan Kredit Buku Cetak (Studi Kasus : CV ASRI MANDIRI). *Jurnal Madani : Ilmu Pengetahuan, Teknologi, Dan Humaniora*, 3(1), 13–24. <https://doi.org/10.33753/madani.v3i1.77>

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