



@is The Best :

Accounting Information Systems and  
Information Technology Business Enterprise  
Volume 8, Issue 1 (2023) Pages 1-15  
ISSN: 2252-9853 (Print) | ISSN: 2656-808X (Online)  
<https://ojs.unikom.ac.id/index.php/aisthebest/index>

Accredited Ranking 4<sup>th</sup>, SK Number: 105/E/KPT/2022

DOI: <https://doi.org/10.34010/aisthebest.v8i1.10235>

## Design of Web-Based Digital Marketing Application Using CodeIgniter to Increase Sellers Turnover in Ciroyom Market

Asti Khoerunisa<sup>1</sup>, Supriyati<sup>2</sup>, Tyas Sylva Fitriana Natansya<sup>3</sup>, Rika Sovyaton Nissa<sup>4</sup>,  
Kevin Fernaldy<sup>5</sup>, Ramadhan Syaeful Bahri<sup>6</sup>

<sup>1-6</sup> Universitas Komputer Indonesia, 40132, Bandung, Indonesia

Email: [asti.11020009@mahasiswa.unikom.ac.id](mailto:asti.11020009@mahasiswa.unikom.ac.id)

---

### ABSTRACT

Expired goods are the condition of a product that is no longer suitable for consumption or use because it has a high risk of causing poisoning for people who consume it or use it. For sellers, especially in traditional markets, there is no way or system to be able to inform goods that are approaching expiration and are still fit for sale, so it can result in goods that are approaching expiration simply being thrown away. The purpose of this study is to develop a digital marketing application design for frozen preparations that are almost expiring to increase trader turnover in the Ciroyom market. The research method used is experimental and descriptive research methods. The system development methodology used is Waterfall. The results of this study explain that digital marketing applications of near-expired frozen processed products in the Ciroyom market have been analyzed by existing sales procedures, which we then developed to overcome the emerging drawbacks of near-expired product sales. This digital marketing application can overcome some of the problems with selling frozen preparations that are about to expire. This digital marketing application can sell merchandise that is almost expired online so consumers can see what items are available.

**Keywords:** Accounting Information Systems, Digital Marketing Applications, Business Enterprises, Sales, CodeIgniter

---

### Introduction

The development of the frozen food industry in the digital business era has opened up new potentials, increased product availability, and driven changes and improvements in product, marketing, and distribution. Consumers also benefit from more variety and convenience in shopping for frozen food online. The development of information technology is currently growing rapidly and has a lot of impact on progress in various social aspects. Along with the rapid development of technology, business growth also continues to increase. Current technological advances show diverse characteristics in each sector, enabling each individual to compete in various fields related to increasingly sophisticated technology [1]. Entrepreneurship in Indonesia continues to grow along with the Government's attention to the convenience and facilities provided to business actors [2]. Innovation must become an integral part of organizational culture and norms, otherwise, innovation will only become a routine activity in the organization [3]. The use of information technology by business people is increasingly widespread in developing the business world through integrated information systems in every day-to-day business activity that almost embraces all levels of society around the world [4]. One of the benefits of using information technology is that it can help companies to develop their business to run more efficiently and effectively. Companies need to make preparations so that they can keep abreast of developments in information technology in the industrial revolution 4.0 era and at the same time survive amid post-pandemic conditions [5]. Information technology is currently widely developed in various scopes in the business world, namely information systems. The information system is an information system that is useful for management in making decisions and also for running

company operations [6]. Based on these conditions, every company needs a strategy to survive the phenomena that occur. Business strategy in general is a way or plan that will be used by a company or business organization to compete successfully in a particular market [7]. Sales include one of the transaction data processed in an accounting information system. Especially now that so many digital-based sales can be useful for sales competition. According to Mulyadi, sales are purchases made with payment in full at the price to be paid and transaction recording will be carried out [8].

Ciroyom Market is a traditional market addressed in West Ciroyom Street, Ciroyom, Andir, Bandung, Indonesia. The market that is active tonight sells a lot of vegetables, fruit, meat, kitchen spices, frozen food, and much more, the goods it sells are also high-quality goods. However, behind the quality goods are certainly not spared from goods that already want to approach expiration which causes the goods to be forced to be thrown away. Expired goods are conditions of goods where a product is no longer suitable for consumption anymore because it has a high risk of causing poisoning for people who consume or use the product [9]. The expiration date is usually written "best before" or "use by". "Best before" is the last date on which food can maintain its quality, while "use by date" is the last day on which food can be safely eaten as long as it has been stored according to the storage conditions written on the packaging [10]. That way the merchant sells the item that is close to expiration by selling it but sometimes it is difficult to sell and in the end, the merchant discards the merchandise.

To overcome this, we made an application The plan that will be carried out by the team is to develop a digital marketing application software processed frozen almost expired that has been created and designed by our team. We hope as a team partners can help with partner problems and hopefully, in the future, the application software can be used by partners. Digital Marketing Frozen Processed is almost expired which will be applied to partners, namely a website-based application software designed using the CodeIgniter Framework. The use of digital marketing has several benefits, including facilitating relationships between businesses and consumers via the Internet, increasing sales significantly, reducing marketing costs, providing real-time services, connecting with consumers who use mobile devices, and maintaining a position in competition with competitors, supporting business competition with large companies and preparing for the Internet of Things (IoT) era [11]. The software that we designed will be made as simple as possible so that partners who use it can be easily understood, not only partners but customers are also easy to order frozen food merchandise products. With the problems that occur in the partners studied it can be concluded that partners need an application design that can accommodate the problems that occur, especially problems in the sale of trade goods before expiration. The solution offered in the needs of these partners is we make application software for selling merchandise before expiration so that goods before expiration can be reused for sale. The information generated from the application is very influential for companies to determine which products are almost expired. Information is data that has been processed so that it has benefits and meaning for those who receive it [12]. The marketing application software that the team designed can increase turnover for partners, by selling goods that are usually discarded but with the existence of this application software can be resold, so that it will increase turnover to partners. If this application software is used, the percentage of turnover will increase to 20% profit for users.

## Method

The research method used is experimental and descriptive research methods. In the development of this digital marketing application, researchers apply the waterfall model. This information application development model has been optimally arranged and organized. The waterfall model is a sequential application software development process, where progress is seen from a process that continues to flow like a waterfall by going through the phases of requirements, design, implementation and verification, and maintenance [13].

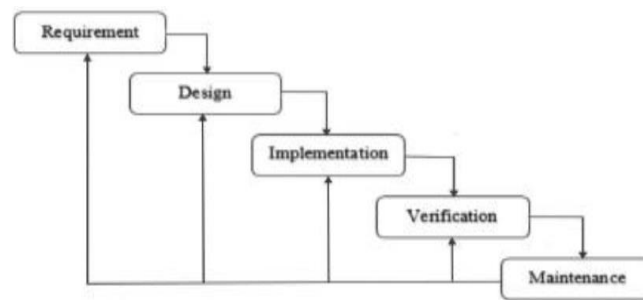


Figure 1. Waterfall Method

The main reason we chose this method is because of the method waterfall. It has clear stages of development, so the work in creating this application is made in detail which can finally reduce errors that will occur. Because of the detailed stages, the final result of the development will be clearly described. The development base used is the CodeIgniter framework. The CodeIgniter framework is a framework of open-source web applications used to build dynamic PHP applications [14].

### Results and Discussion

The design that the author will make is a digital marketing application, as explained above that this application is needed for traders and Ciroyom market managers in carrying out product marketing that is approaching expiration. The output of the application made is a financial statement which will be used by the leader as material for decision making. The problems that occur with our partners include:

Table 1. Identity of Partner problems and solutions

No	Partners	Partners Issues	Solutions
1.	Market Manager	Market managers do not yet have good governance	Provide containers by implementing applications that have been designed
2.	Rajawali Sosis Bakso (RSB)	The partner does not yet have an application for marketing products that are approaching expiration	Provide containers by implementing applications that have been designed
3.	PD Ajat (Ajat Trading Company)	The partner does not yet have an application for marketing products that are approaching expiration	Provide containers by implementing applications that have been designed

Table 2. Application Requirements Analysis

No	Description	Condition
1.	Hardware	RAM Minimum 2 GB, Harddisk 5 GB free space
2.	Software	Browser: Mozilla, Google Chrome, etc.; XAMPP: Version 3.2.2
3.	Procedure	1. Customers will buy near-expired products offered by the partners we research. 2. The operator will execute sales transactions that have been paid by the customer. 3. The operator records the results of the sales recap. 4. If the item before expiration has not been sold then the operator will dispose of the product.

Based on the results of the needs analysis in making this digital marketing application, the design of this application will be mapped using the CodeIgniter framework with the waterfall method. The preparation of reports in this digital marketing application is designed based on SAK EMKM standards. Based on the system flow described above, the meal will be designed with a Flowchart, Data Flow diagram, Menu Program Structure, and Mockup of this Digital Marketing Application.

### 1. Flowchart

A flowchart is a diagram that describes the steps of an algorithm or sequential instructions in a system. System analysts utilize flowcharts as documented proof to illustrate to programmers a logical diagram of the system that will be constructed [15]. Authors have designed Flowchart Proposals for the design of digital marketing applications processed by frozen are almost expired in the Ciroyom market are as follows:

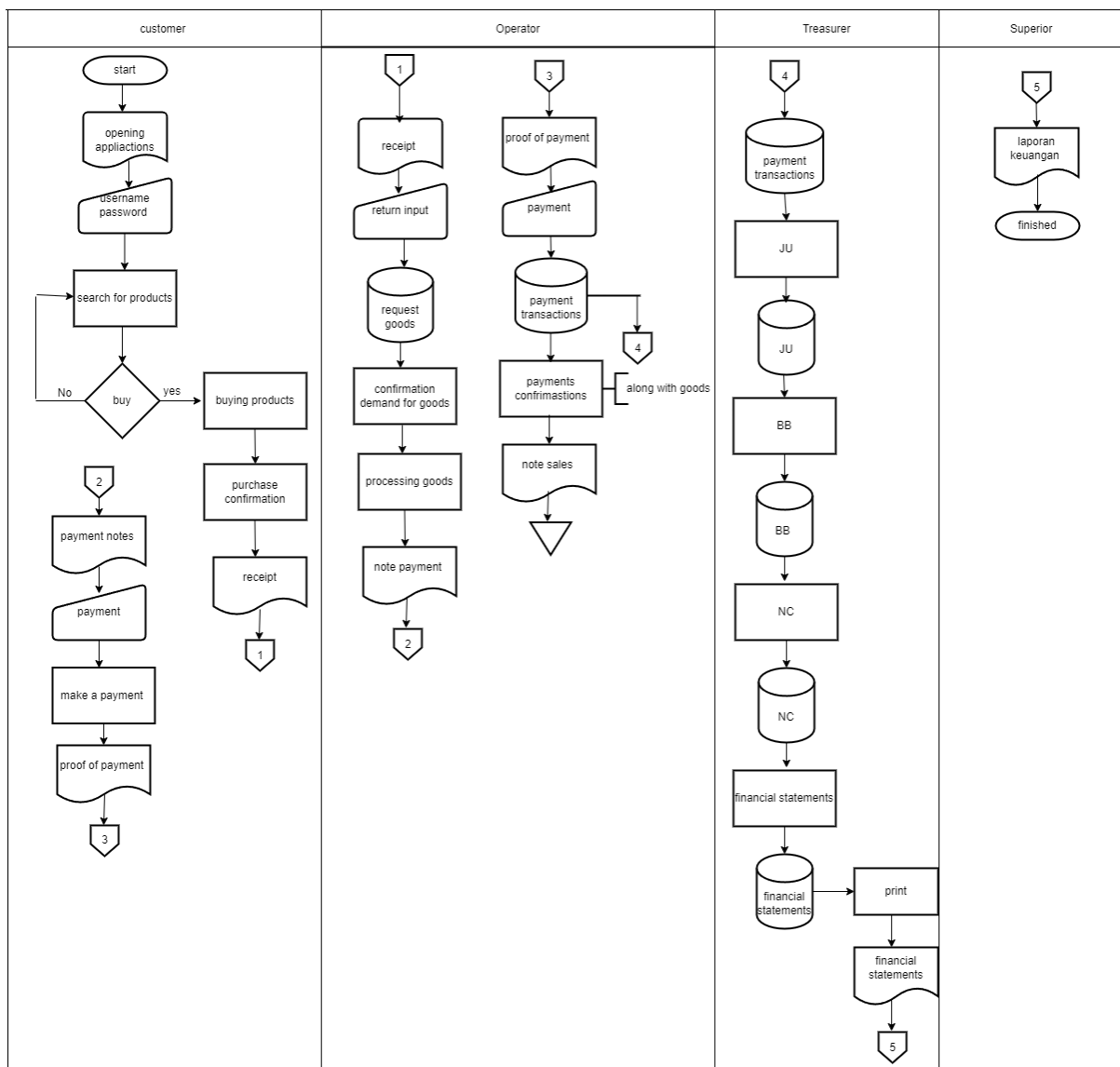


Figure 2. Flowchart Digital Marketing Application

## 2. Data Flow Diagram (DFD)

DFD is a diagram that uses symbols to describe the data flow of a system, and its use is very helpful in understanding the system logically, structurally, and clearly [18]. The author has designed Data Flow Diagram Proposals for the design of digital marketing applications processed by Frozen that are almost expired in the Ciroyom market are as follows:

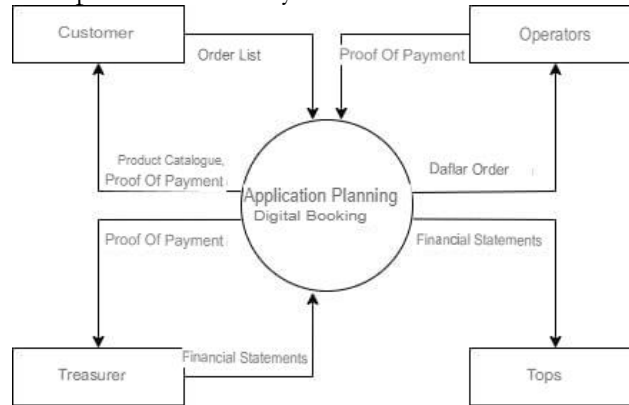


Figure 3. Context Diagram

The Data Flow Diagram above explains that customers who order frozen processed products almost expired then the order list goes to the partner operator and the operator makes proof of payment that will be given to the customer and also the treasurer, later the treasurer will make financial statements and give them to superiors.

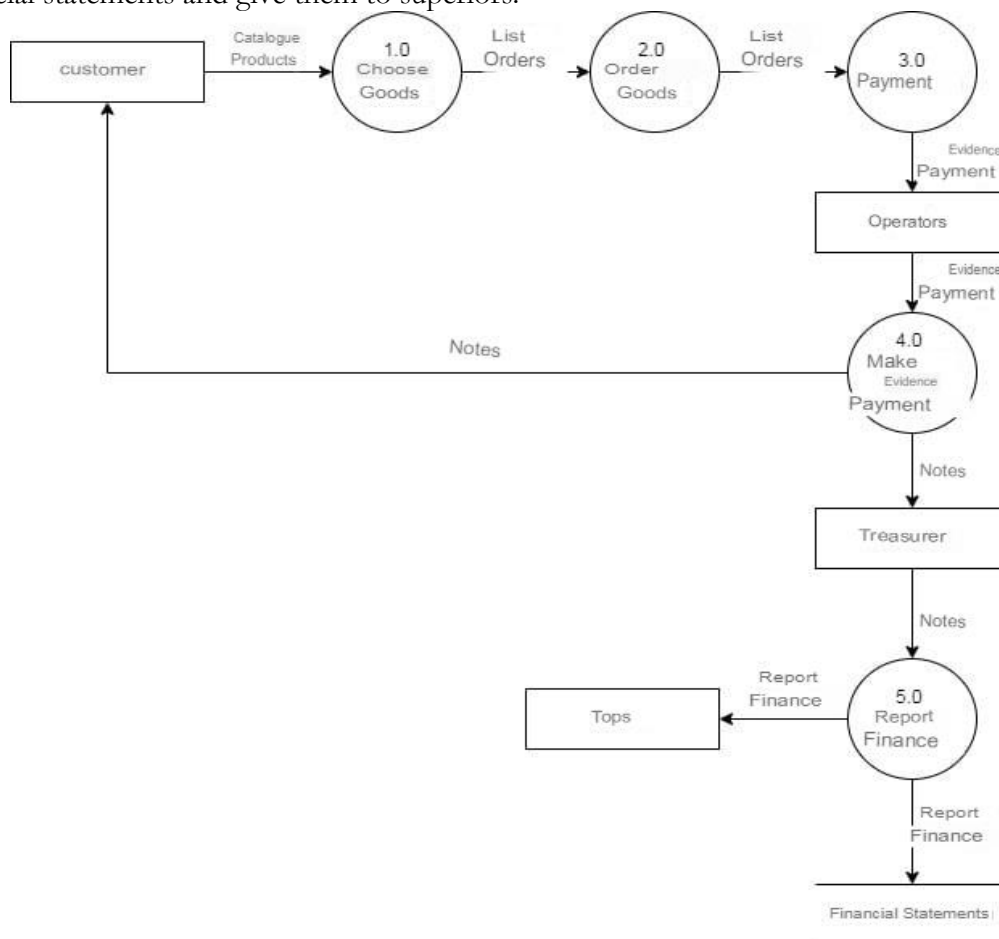


Figure 4. DFD Level 0

### 3. Entity Relationship Diagram (ERD)

ERD is a graphical representation used to illustrate relationships between entities in a database. This diagram is an important method in database design to identify entities, attributes, and relationships between these entities. ERD in Figure 5 is used to describe the relationship between entities in the application that is made.

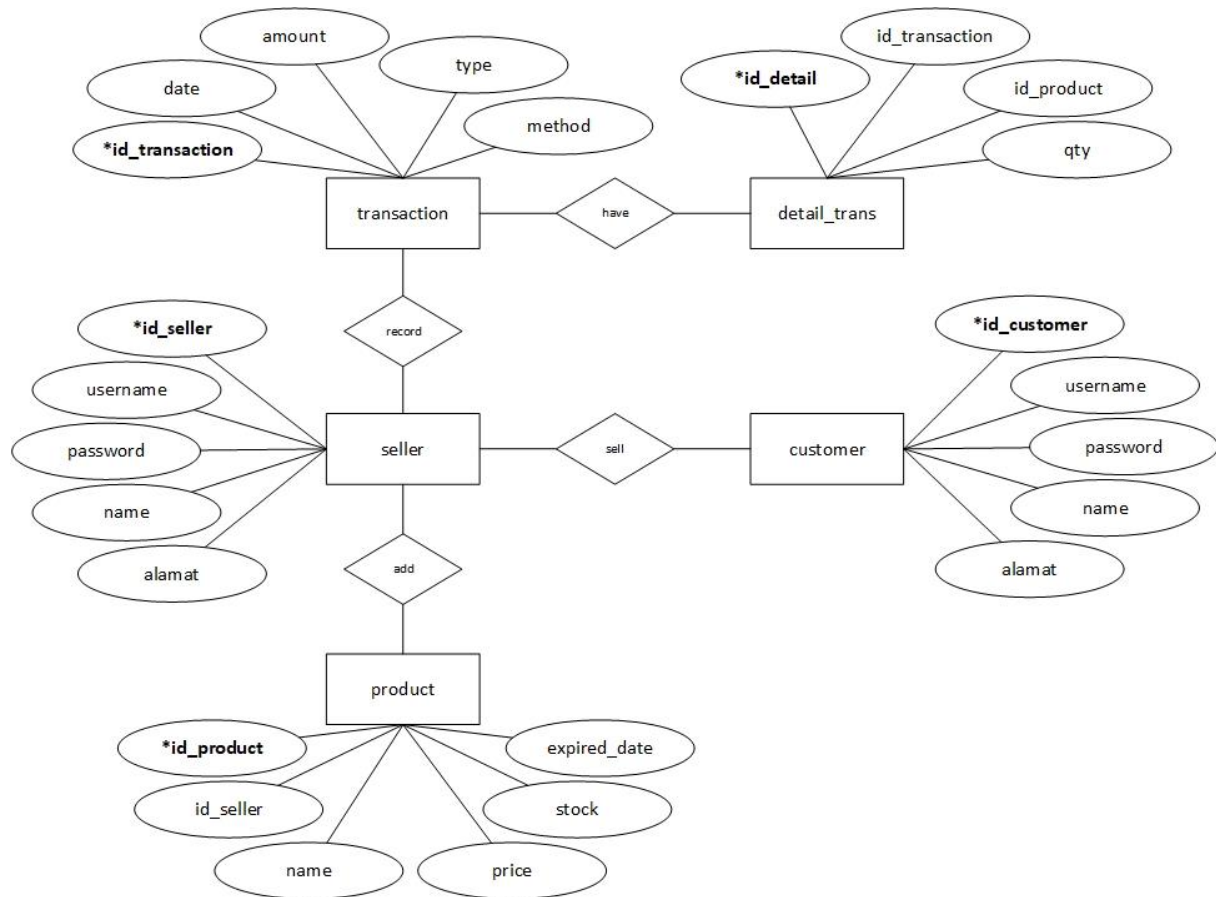


Figure 5. Entity Relationship Diagram

### 4. Program Menu Structure

Program menu structure refers to the arrangement and hierarchy of menu options in a computer program. Its function is to allow the user to access and navigate the various features and functions available in the program. Figure 6 illustrates the program menu structure in the designed application. Each feature is described in detail its flow and access.

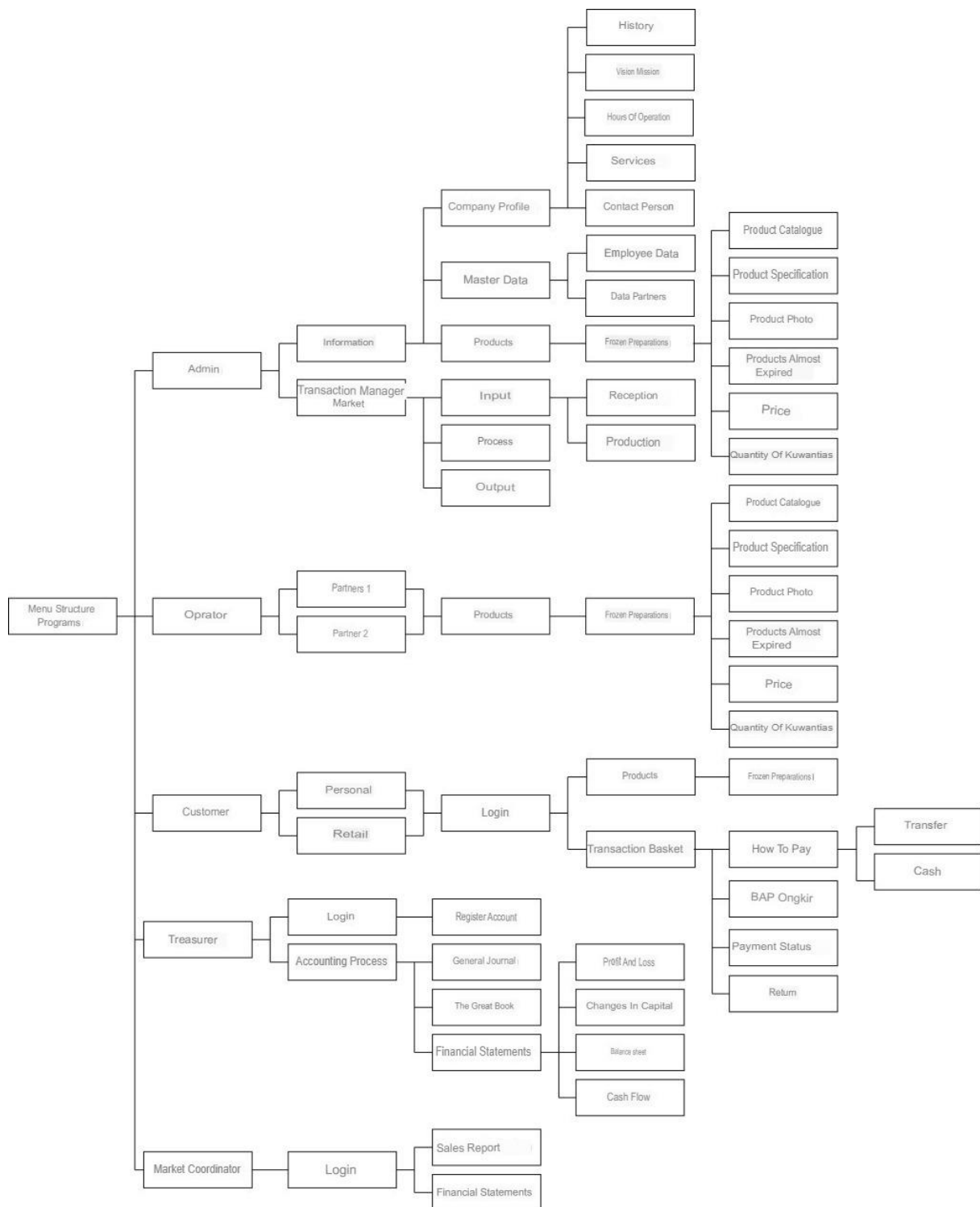


Figure 6. Program Menu Structure

#### 4. Frozen Processed Digital Marketing App Mockup Almost Expired

Figure 7 shows a login page application mockup that is used to enter the application based on the authorization of each account. Each user has different roles and access rights. These roles are seller, customer, market manager, and operator.

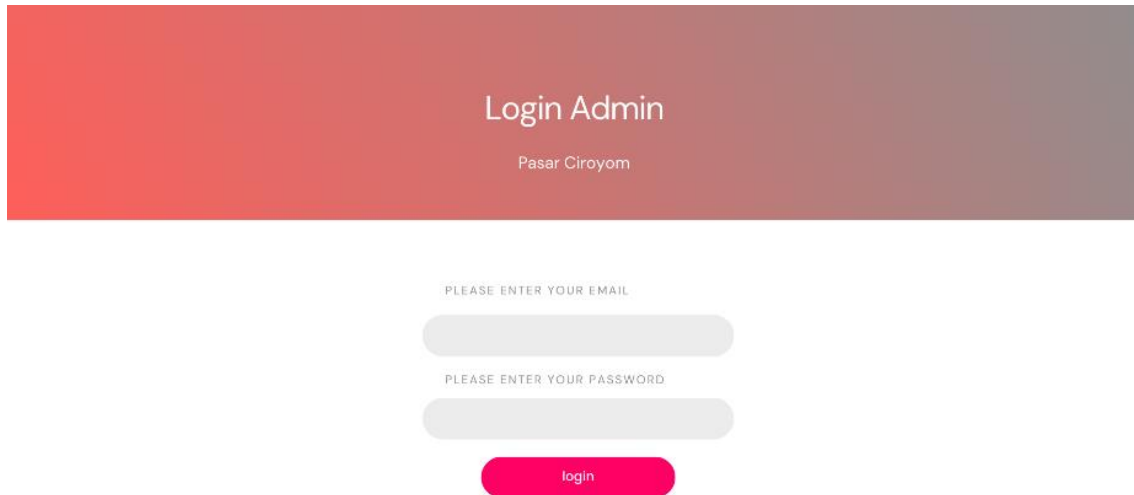


Figure 7. Mockup Login User

Figure 8 is the display after successfully logging in to the admin seller page, on this page the admin can access the profile, master data, and product features.



Figure 8. Mockup Menu Program of Seller Admin



Figure 9 shows the features after the seller admin accesses the profile menu, then other features will appear, namely a menu to add company history information, company vision and mission, service, and contact person.

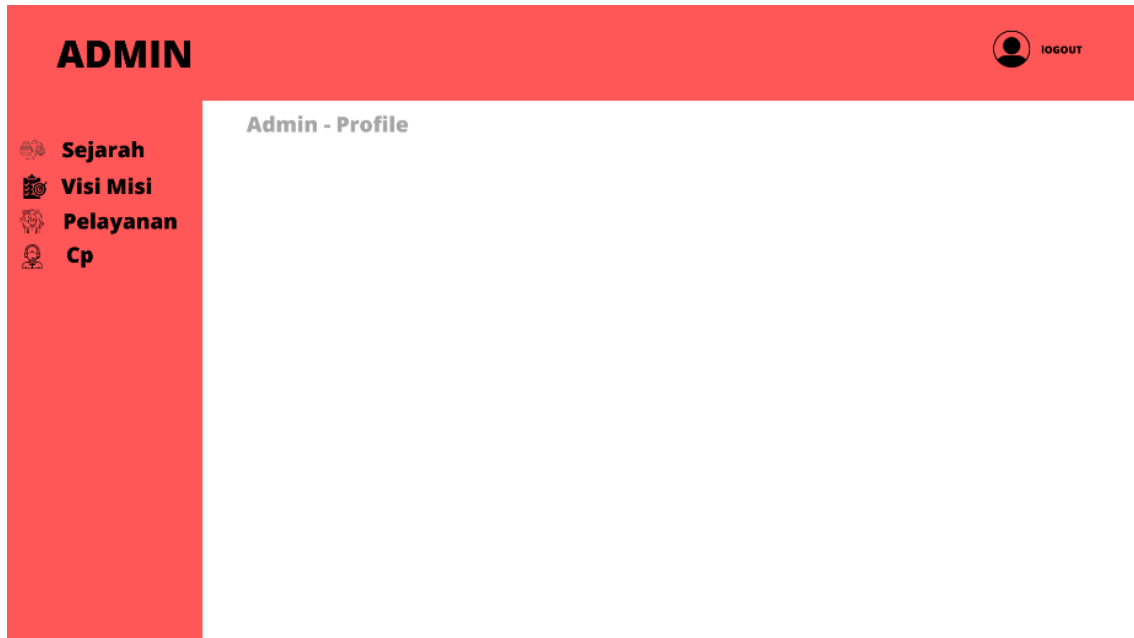


Figure 9. Mockup Menu Program of Profile Seller Admin

Figure 10 shows the features after the seller admin accesses the master data menu, then another feature will appear, namely a menu for adding employee data and partner data.

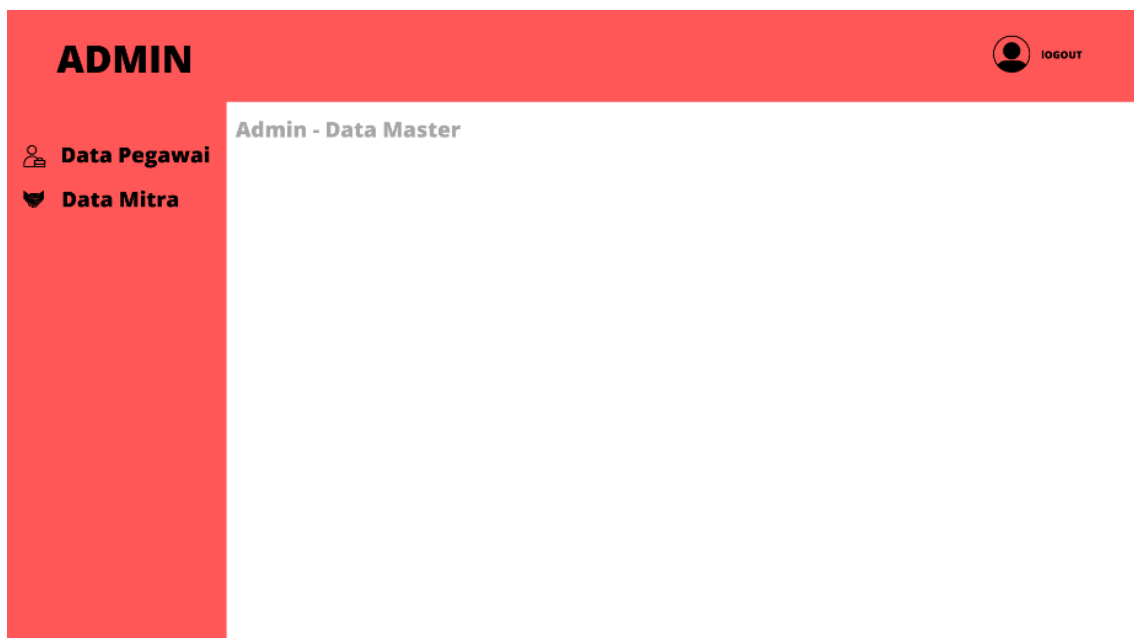


Figure 10. Mockup Menu Program of Data Master Seller Admin

Figure 11 displays the product catalog data for Pasar Ciroyom sellers which can be added, modified, and deleted. Information about the product is conveyed in detail such as name, product, stock availability, price, and expiration time. This page also provides clear, detailed, and easy-to-understand information about the products or services offered. Product descriptions, pictures, specifications, and customer reviews (if any) can help customers understand well and make the right purchasing decisions.

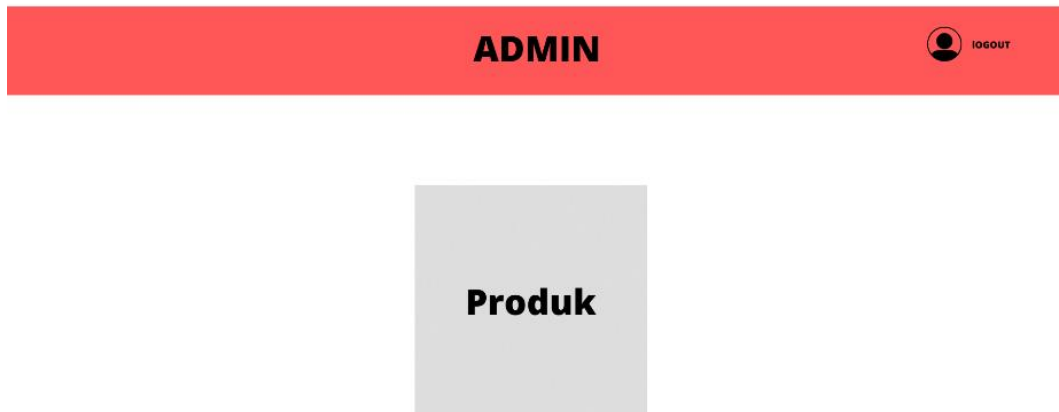


Figure 11. Mockup Menu Program of Product Seller Admin

Figure 12 displays the operator page after successful login. Operators can see a list of Ciroyom Market partners.



Figure 12. Mockup Menu Program of Market Operator

Figure 13 shows the features accessible by Ciroyom Market operators. On this page, operators can access catalogs, specifications, products, discounts, prices, and quantities.

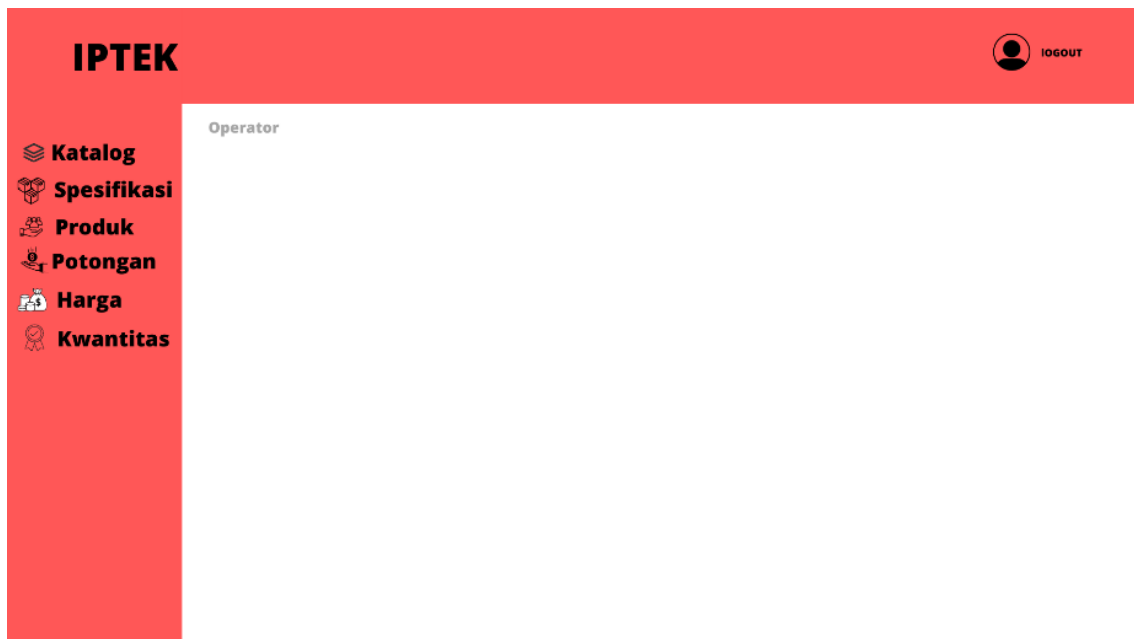


Figure 13. Mockup Menu Program of Market Operator

Figure 14 illustrates the display after the customer has successfully logged into the system. This page needs to have a user-friendly, intuitive, and secure interface. Customers should be able to easily add products to their shopping cart, view order details, select a payment method, and complete the payment process quickly and effortlessly.

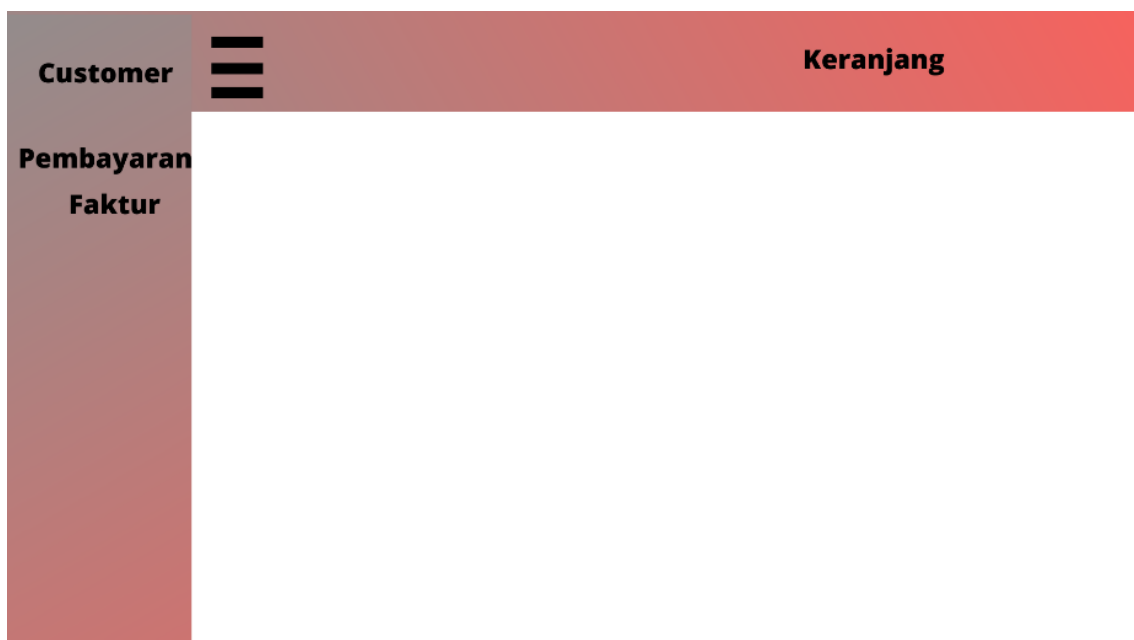


Figure 14. Mockup Menu Program of Customer

Figure 15 shows the treasurer page mockup when logging into the system. Menus that can be accessed are General Journals, General Ledgers, and Financial Reports.

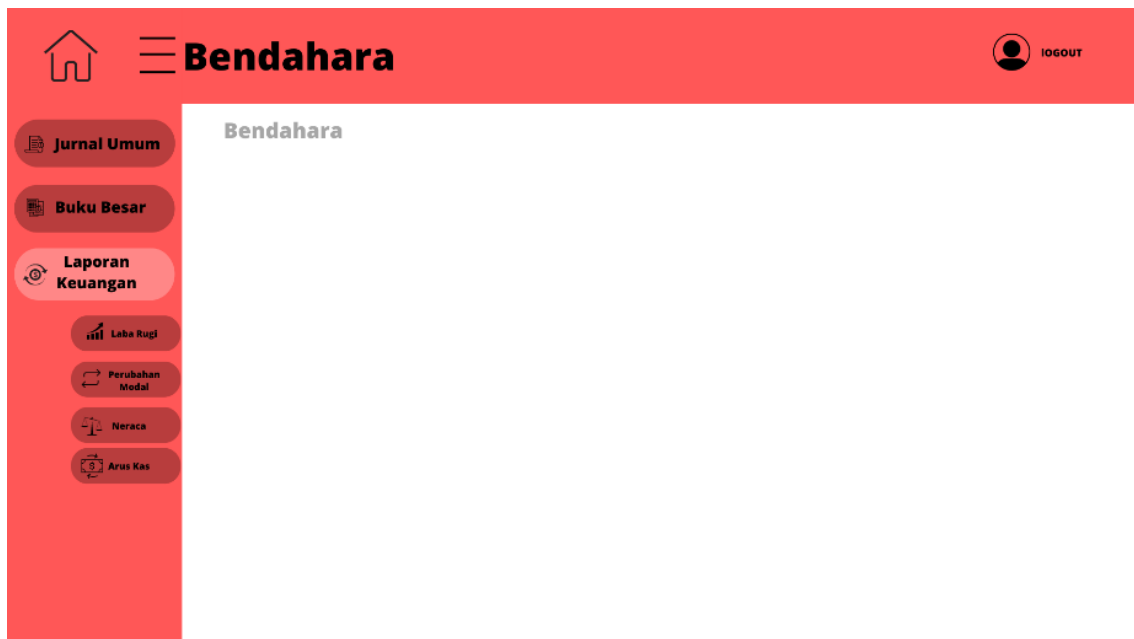


Figure 15. Treasurer Menu Mockup

Figure 16 displays the general journal page. A general journal is a form of accounting record that is used to record sequentially business transactions. This journal acts as the first ledger that records all the company's financial transactions.

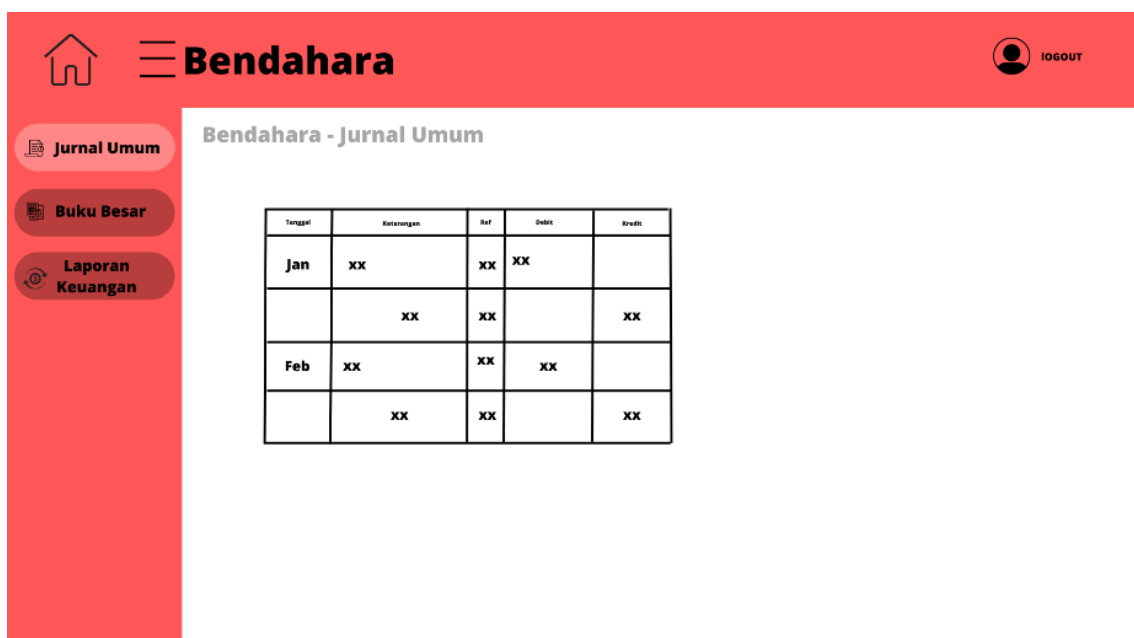


Figure 16. Mockup Menu Program of General Journal in Treasurer

Figure 17 displays the general ledger pages. A general ledger, also known as a general ledger, is a record that is used to detail every financial transaction that occurs in a company. This is one of the important components of the accounting record system.

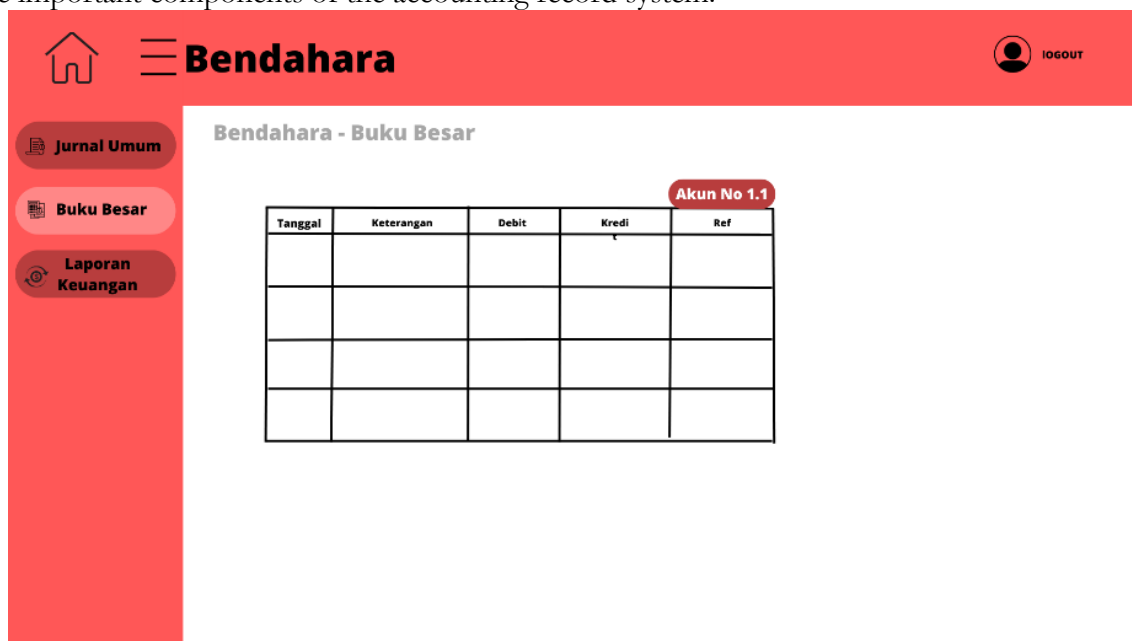


Figure 17. Mockup Menu Program of General Ledger in Treasurer

Based on the system design and specifications that have been made above, it is hoped that this design can be realized in a website-based application so that it will have an impact on increasing Ciroyom Market turnover. In addition, by designing a good information system, it is hoped that the Ciroyom Market can experience benefits such as:

1. Operational efficiency: Designing an effective information system can increase the efficiency of business processes, reduce inefficient activities, automate routine tasks, and reduce operational costs. The result is an increase in the productivity, efficiency, and operational speed of the company.
2. Better decision-making: An effective information system provides management with accurate, up-to-date, and relevant data, thereby facilitating informed decision-making. Better information availability and easy access assist management in analyzing business performance, identifying trends, and taking necessary actions.
3. Effective data processing and storage: The design of information systems enables organizations to manage data more efficiently. Data can be stored in an organized, centralized and secure structure. Thus, facilitating access, updating, and using data effectively, both for operational needs and decision-making.
4. Improved collaboration and communication: Integrated information systems facilitate collaboration and communication between departments or teams within the company. Employees can collaborate, share information, and communicate more effectively on projects. This improves work efficiency and strengthens coordination between various business units.
5. Improved customer satisfaction: An effective information system plays a role in improving customer service. With centralized customer data and fast access to important information, companies can respond quickly to customer needs and demands. This helps strengthen relationships with customers and increase their satisfaction.
6. Better inventory and supply chain management: By designing an integrated information system, companies can manage inventory more efficiently, optimize procurement processes,

monitor real-time inventory, and improve coordination in the supply chain. This has the potential to reduce inventory costs, increase product availability, and reduce the risk of shortages or excess inventories.

## Conclusion

The digital application of frozen processed marketing is almost expired in the Ciroyom market analyzed based on ongoing procedures, then we as authors develop to overcome weaknesses that occur in the frozen processed marketing process that arises. The design of this digital application is designed based on the website using the CodeIgniter basin framework and applies the waterfall method in the development of the application. Some marketing management problems in frozen processing that are almost expired have been analyzed, among others, often frozen preparations that will be sold do not run out and result in goods approaching the expiration date must be disposed of just like that so we make a solution, namely by making a container for traders to sell frozen preparations that are almost expired with the digital application marketing frozen preparations that are almost expired that we have designed. The marketing application software that the team designed can increase turnover for partners, by selling goods that are usually discarded but with the existence of this application software can be resold, so that it will increase turnover to partners. If this application software is used, the percentage of turnover will increase to 20% profit for users. This research has a lot of space to be developed with better results, information system testing can provide an overview of whether the application to be created and implemented at the Ciroyom Market works according to its function and no errors occur.

## Acknowledgment

The author would like to thank Mr. Manager of Ciroyom Market who has supported the provision of data and also information on the needs of this research as a resource person.

## References

- [1] Supriyati and S. R. Abdillah, "Data Mining in Sales Data Grouping," *IOP Conference Series: Materials Science and Engineering*, vol. 879, no. 1, p. 12116, 2020, doi: 10.1088/1757-899X/879/1/012116.
- [2] Supriyati *et al.*, *Sumber Daya Manusia Organisasi Kewirausahaan*. Bandung: Media Sains Indonesia, 2023.
- [3] Supriyati *et al.*, *KEWIRAUSAHAAN ERA SOCIETY 5.0*, vol. 27, no. 3. Kab. Serang Banten: PT Sada Kurnia Pustaka, 2023.
- [4] N. Najla, S. Supriyati, and D. A. Dewi, "Design of Sales Accounting Information System Using EMKM Accounting Standard," *@is The Best: Accounting Information Systems and Information Technology Business Enterprise*, vol. 7, no. 2, pp. 166–180, 2023, doi: 10.34010/aisthebest.v7i2.9125.
- [5] S. Supriyati, S. Mulyani, H. Suharman, and T. Supriadi, "The Influence of Business Models, Information Technology on the Quality of Accounting Information Systems Digitizing MSMEs Post-COVID-19," *Jurnal Sistem Informasi*, vol. 18, no. 2, pp. 36–49, 2022, doi: 10.21609/jsi.v18i2.1141.
- [6] N. A. Azwani, C. C. A. L., and Y. M. B. Sembiring, "Pengertian dan Penerapan Sistem Informasi, Organisasi dan Strategi." OSF Preprints, Medan, 2023, doi: 10.31219/osf.io/a3569.
- [7] Supriyati *et al.*, *Ekonomi Manajerial & Strategi Bisnis*. Kab. Serang Banten: PT Sada Kurnia Pustaka, 2023.
- [8] F. Y. R. Guk-Guk and I. Fauzi, "Analisis Sistem Penjualan Cash, Kredit, Tender Dan Konsiyansi Di PT. Indofarma Global Medika Medan," *Management Studies and*

- Entrepreneurship Journal (MSEJ)*, vol. 4, no. 2, pp. 1962–1967, Mar. 2023, doi: 10.37385/msej.v4i3.1420.
- [9] F. Bu'ulolo, K. J. Ndruru, and J. Marbun, "PERLINDUNGAN HUKUM TERHADAP KONSUMEN TERKAIT PENJUALAN MAKANAN DAN MINUMAN DALAM KEMASAN KADALUARSA," *JURNAL RECTUM: Tinjauan Yuridis Penanganan Tindak Pidana*, vol. 4, no. 2, Dec. 2022, doi: 10.46930/jurnalrectum.v5i1.2592.
- [10] L. Dyah and D. Arini, "Faktor-Faktor Penyebab Dan Karakteristik Makanan Kadaluarsa Yang Berdampak Buruk Pada Kesehatan Masyarakat," *Jurnal Teknologi dan Industri Pangan*, vol. 2, no. 1, pp. 15–24, 2017.
- [11] S. Supriyati, R. S. Bahri, S. C. Nugraha, and K. Fernaldy, "Implementasi aplikasi digital marketing sebagai strategi penjualan untuk meningkatkan kinerja pendapatan UMKM di wilayah Cisaranten Kulon," *KACANEGARA Jurnal Pengabdian pada Masyarakat*, vol. 6, no. 1, pp. 25–37, 2023, doi: 10.28989/kacanegara.v6i1.1350.
- [12] S. Supriyati and D. Rizky, "Model Perancangan Sistem Informasi Akuntansi Budidaya Perikanan Berbasis SAK EMKM dan Android," *@is The Best : Accounting Information Systems and Information Technology Business Enterprise*, vol. 3, no. 2, pp. 301–315, 2018, doi: 10.34010/aisthebest.v3i2.1526.
- [13] C. L. Rohmat, D. E. Putri, M. Martanto, and W. Prihartono, "Rancang Bangun Sistem Informasi Arsip Surat Menggunakan Metode Waterfall Pada Dinas Lingkungan Hidup Kota Cirebon," *INFORMATICS FOR EDUCATORS AND PROFESSIONAL: Journal of Informatics*, vol. 7, no. 2, Jun. 2023, doi: 10.51211/itbi.v8i1.2185.
- [14] N. Aini, D. Anggraeni, and S. Sahren, "PEMBANGUNAN SISTEM INFORMASI STRATEGI CRM DENGAN FRAMEWORK CODEIGNITER PADA LAUNDRY BANG TRIS," *JUTSI (Journal Technology and Information System)*, vol. 3, no. 2, 2023, doi: 10.33330/jutsi.v3i2.2248.
- [15] R. Rosaly and A. Prasetyo, "Pengertian Flowchart Beserta Fungsi dan Simbol-simbol Flowchart yang Paling Umum Digunakan." Politeknik Purbaya, Kabupaten Tegal, 2019.