

WEBSITE-BASED COOPERATIVE RECORDING APPLICATION USING EMAIL NOTIFICATIONS

Kusmira¹, Wahyat²

Department of Informatics Engineering, Politeknik Negeri Bengkalis, Indonesia^{1,2}

Kusmira75@gmail.com¹, wahyat@polbeng.ac.id²

Abstract

The advancement of information technology encourages cooperatives to undergo digital transformation. Koperasi Maju Bersama PT. Priatama Riau previously used a manual credit (bon) recording system based on notebooks and Excel spreadsheets, which was prone to errors, time-consuming, and lacked automated payment reminders. This final project aims to develop a web-based cooperative credit recording application equipped with email notification features to improve data management efficiency and payment discipline among members. The development method used is the waterfall model, consisting of problem identification, data collection, system design, implementation, and testing. The application was built using the PHP programming language with the Laravel 11 framework and MySQL as the database. The results show that the application successfully manages credit data, member data, goods, and billing in a centralized system, while also sending automated email notifications to cooperative members. The system has been tested and works well across various devices and browsers. In conclusion, the application effectively replaces the manual system with a more efficient, accurate, and professional digital system, enhancing payment discipline and assisting administrators in generating reports for management.

Keywords: Cooperative, Credit, Website, Laravel, Email Notification

1. INTRODUCTION

In today's digital era, the development of information and communication technology has become an integral part of various aspects of life. Technology is now often used as a tool for promotion and information dissemination, particularly in the field of websites, which play a significant role in conveying various information. Digital-based systems enable greater efficiency, accuracy, and accessibility compared to conventional methods. Advances in information technology have fueled a new revolution marked by the shift from manual (human) to digital (computerized) labor systems.

Koperasi Maju Bersama PT. Priatama Riau is a cooperative owned by PT. Priatama Riau, a palm oil plantation company in Rupert, established in 2007. The cooperative was established in 2024 to facilitate employee shopping. This cooperative operates in the basic food sector, providing various essentials such as rice, flour, sugar, and other necessities. This cooperative serves sales not only to employees but also to the general public. Receipts are only for PT. Priatama Riau employees. Cooperatives are economic movements organized in accordance with the principles of family and solidarity.

Koperasi Maju Bersama PT. Priatama Riau's bookkeeping is still done manually, with the administrator recording PT. Priatama Riau's employee receipt transactions using a ledger and then summarizing them using Microsoft Excel. This makes the process slow and prone to errors. Any changes or errors in the recording require the administrator to redistribute files, making it difficult to monitor data quickly and accurately. Furthermore, the administrator faces challenges in reminding cooperative members of payment due dates, resulting in delays that impact the smooth operation of the cooperative. In the era of globalization, information technology plays a significant role in strengthening transparency, accountability, and operational efficiency.

Therefore, a technology-based solution is needed. A website-based receipt recording system with an email notification feature is a suitable alternative. This system allows for more accurate data management. Furthermore, the automatic notification feature reminds cooperative members of payment schedules, minimizing the risk of late payments and optimizing cooperative services to its members. With this notification feature, organizations can experience significant benefits in increasing cooperative productivity and regularity.

2. REVIEW OF LITERATURE

This study is structured based on references and literature from previous relevant research as a foundation of data for the research framework, encompassing theories, methods, and prior research findings:

- a. (Dede Handayani et al., 2023) This research is entitled "Website-Based Cooperative Savings and Loan Information System Application Using the Waterfall Method." This research aims to create a website-based application to address the problem of manual cooperative transaction management.
- b. (Aielsa Naomi Athaya et al., 2023) This research is entitled "Design and Construction of a Requisition and Expenditure Receipt Application Using a Website-Based Prototype Method." This research develops an application to simplify the approval of requisition receipts using a prototype method. This research successfully reduced the approval time from 5-30 days to ≤ 5 hours. Testing using the ISO 9126 standard resulted in high scores for functionality, reliability, usability, efficiency, maintainability, and portability.
- c. (Muhammad Reza Vicky et al., 2023) This research is entitled "Designing a Web-Based Savings and Loan Cooperative Information System at the Jakarta Lestari Forest Cooperative." This research develops a web-based information system to address the problem of manual data recording that still uses Microsoft Excel. The developed system uses the waterfall method and can manage savings, loans, and installment data of cooperative members.

3. METHOD

This study employed an applied descriptive research approach and utilized the Waterfall System Development Life Cycle (SDLC) model. These steps are Problem Identification, Data Collection, System Analysis, Application Design, Application Creation, Application Testing

3.1 Data and Tools

This study used primary and secondary data. Primary data was collected through interviews, observations, and documentation from the Cooperative, including loan transactions, inventory, and loan reports.

- a. Hardware: Laptop (Intel Core i5, 8 GB RAM)
- b. Software: Laravel Framework (PHP Language), MySQL database, Visual Studio Code, and Draw.io for modeling diagrams.
- c. Modeling tools: Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), and Use Case Diagram for system design.

3.2 Research Procedure

The research procedure followed several systematic stages:

- a. Problem Identification

At this stage, the researcher identified problems that occur at Koperasi Maju Bersama PT.Priatama Riau in Rupat, which still relies on manual bookkeeping for recording sales, purchases, and payroll. This manual process often results in data entry errors, duplication, and inefficiency in financial reporting. Through field observation and

interviews with the owner and admin, it was found that a digital management system is needed to streamline operations and ensure data accuracy.

b. Data Collection

Data were collected using both primary and secondary sources:

- i. Primary Data: Direct observation and interviews with Koperasi Maju Bersama PT.Priatama administrators to understand business processes, data flow, and system needs.
- ii. Secondary Data: References from previous studies, books, and journals related to management information systems.

The data collected includes loan transaction records, goods data, member data, loan reports and goods reports.

c. System Analysis

This stage aimed to analyze the current system's weaknesses and define the requirements for the new system. The analysis used several tools and methods:

- i. Context Diagram and Data Flow Diagram (DFD) were created to represent how data moves between entities.
- ii. Entity Relationship Diagram (ERD) was developed to define database structure and relationships between data entities.
- iii. Requirement Analysis determined both functional (system features such as login, loan, payroll, and reports) and non-functional (speed, security, and user-friendliness) aspects.

d. System Design

System design translated the analysis results into technical blueprints:

- i. User Interface (UI) was designed using Balsamiq Mockup and Figma, focusing on simplicity and clarity for users such as admins, owners, and employee.
- ii. Database Design was created using MySQL Workbench, based on the ERD model.
- iii. Process Flow was refined through Activity Diagrams to visualize the logical sequence of system operations.

This design phase ensured that all system components were connected and easily maintained.

e. System Implementation

The system was implemented using both hardware and software tools: :

- i. Hardware: Laptop (Thinkpad, Intel Core i5-13420H, 16GB RAM).
- ii. Software: Windows 11, Laravel Framework with php language, MySQL database, and Draw.io for diagramming.

The application was developed as a web-based system where admins could manage transactions, loan, and payroll, while owners could monitor reports and performance through dashboards.

f. Testing and Evaluation

System evaluation was carried out through Black Box Testing and User Evaluation:

- i. Black Box Testing verified each function such as login, purchasing, sales, payroll, and reporting to ensure that outputs matched expectations.
- ii. User Evaluation was conducted with the admin and owner to assess usability, accessibility, and accuracy of data.

Testing results confirmed that all features operated correctly, and the system improved recording efficiency and reduced manual errors.

3.1 System Design

System design is carried out to assist in creating the system that will be created. The design carried out is as follows.

1. Context Diagram

The overall workflow of the application is depicted in the Context Diagram, as shown in Figure 1.

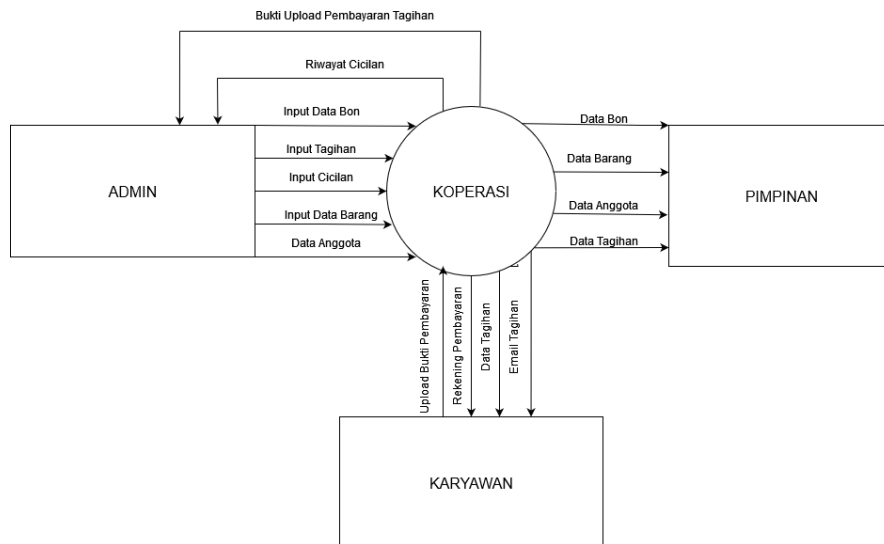


Fig 1. Context Diagram

2. Use Case Diagram

In this use case diagram, there are two actors: the admin and the leader. In this application, the admin can log in and manage receipt data, goods data, and member data. Meanwhile, the leader enters the homepage and logs in. After registering an account, the leader can view receipt data, goods data, and member data. The use case diagram for this website-based cooperative receipt recording application using email notifications can be seen in Figure 2.

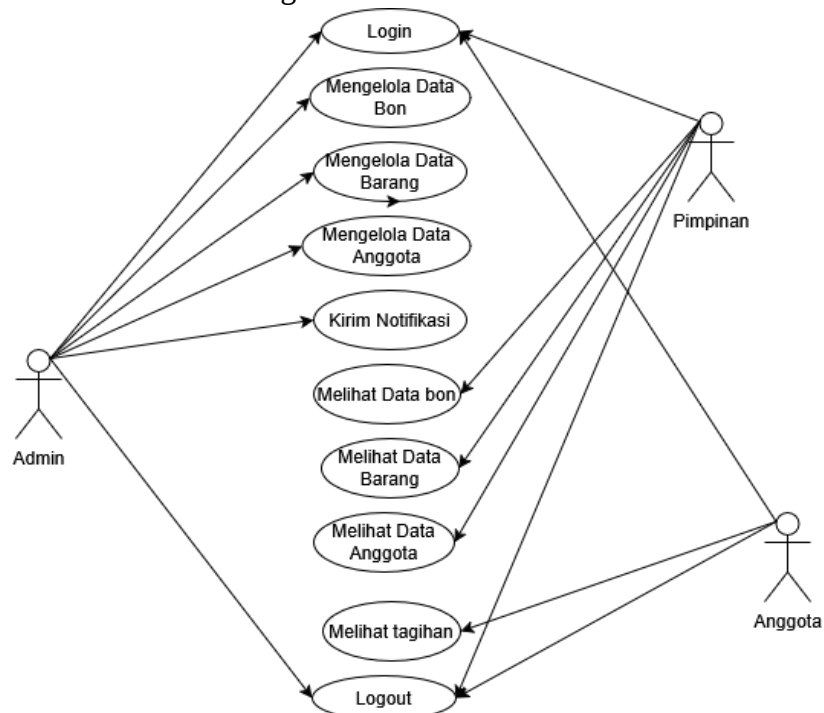


Fig 2. Use Case Diagram

3. Entity Relationship Diagram

The overall workflow of the application is depicted in Entity Relationship Diagram, as shown in Figure 3.

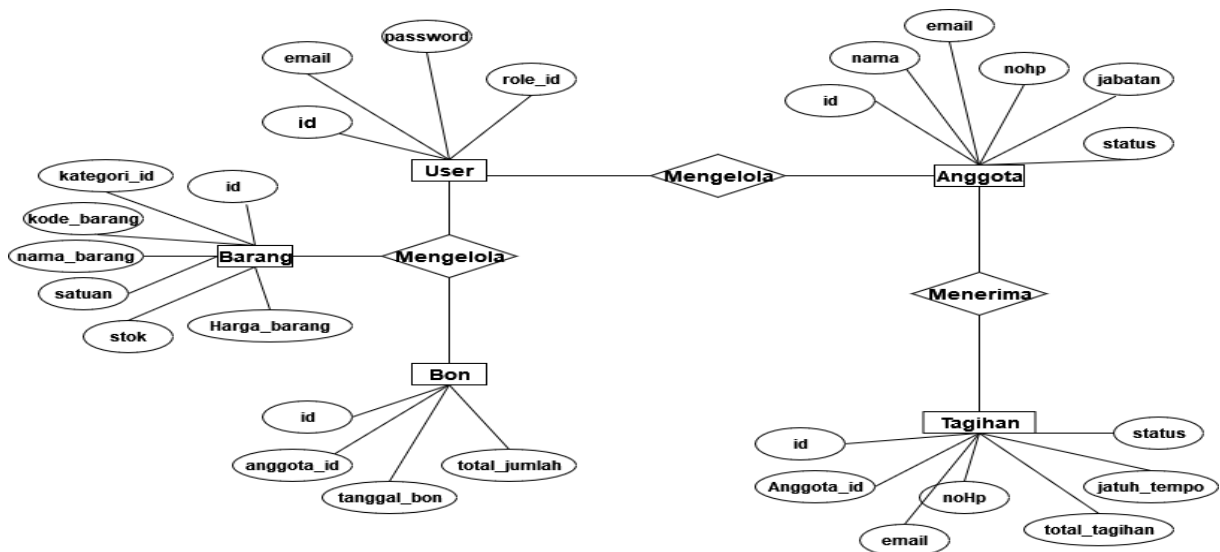


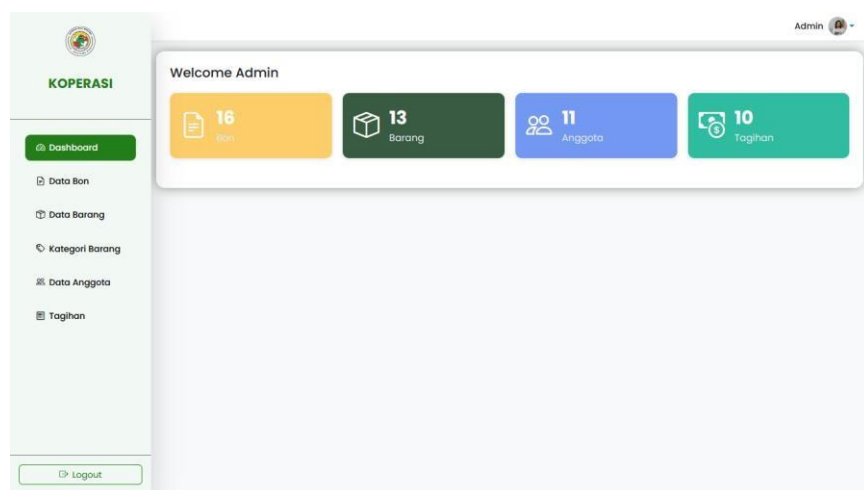
Fig 3. Entity Relationship Diagram

4. RESULT & DISCUSSION

3.1 Application Overview

1. Admin Interface Overview

The system admin dashboard page displays receipt data, item data, item categories and member data and the admin can export the data to Excel and send email notifications when due.



Admin Dashboard Page



KOPERASI

Dashboard

Data Bon

Data Barang

Kategori Barang

Data Anggota

Tagihan

Logout

Admin

Data Bon

Cari nama bon...

-- Semua Periode

Cari

Reset

PDF

Excel

+ Tambah Bon

No	Nama Anggota	Tanggal	Barang	Total	Aksi
Bulan: July 2025					
1	Sartika	17 July 2025	Sabun Ekonomi (5 x Rp3.000) = Rp15.000 Minyakita (4 x Rp17.000) = Rp68.000 Wafello (4 x Rp8.000) = Rp32.000	Rp115.000	Hapus
2	utari elitta	17 July 2025	Kopi Kapal Api 380 (3 x Rp33.000) = Rp99.000 Pop Mie (4 x Rp6.000) = Rp24.000 Sprite (4 x Rp7.000) = Rp28.000 Beras SPHP 5kg (5 x Rp70.000) = Rp350.000	Rp501.000	Hapus
3	akhyaridina	17 July 2025	Surya kecil (4 x Rp45.000) = Rp180.000 Beras SPHP 5kg (1 x Rp70.000) = Rp70.000 Good day (4 x Rp3.000) = Rp12.000	Rp262.000	Hapus
4	sonia sahara	15 July 2025	Beras SPHP 5kg (10 x Rp70.000) = Rp700.000	Rp700.000	Hapus
		12 July 2025	Minyakita (2 x Rp17.000) = Rp34.000 Kerupuk Natasya (1 x Rp18.000) = Rp18.000 Top Gula Aren (6 x Rp2.000) = Rp12.000	Rp65.000	Hapus
5	kamella	12 July 2025	Beras SPHP 5kg (2 x Rp70.000) = Rp140.000 Pop Mie (5 x Rp6.000) = Rp30.000 Kopi Kapal Api 380 (3 x Rp33.000) = Rp99.000	Rp269.000	Hapus
6	Nora Susanti	11 July 2025	Tepung Terigu (3 x Rp11.000) = Rp33.000	Rp33.000	Hapus

Admin Loan Page



KOPERASI

Dashboard

Data Bon

Data Barang

Kategori Barang

Data Anggota

Tagihan

Logout

Admin

Data Barang

Cari nama barang...

CariReset

Export PDF

+ Tambah Barang

No	Kode	Nama	Kategori	Satuan	Stok	Harga	Total Harga	Aksi
1	BRG-0005	sarden	Makanan Siap Saji	Kaleng	100	Rp22.000	Rp2.200.000	EditHapus
2	BRG-0006	Minyakita	Minyak Goreng & Santan	Bungkus	380	Rp17.000	Rp6.460.000	EditHapus
3	BRG-0007	Beras SPHP 5kg	Beras & Bahan Pokok	Karung	25	Rp70.000	Rp1.750.000	EditHapus
4	BRG-0008	Pop Mie	Makanan Siap Saji	Dus	110	Rp6.000	Rp660.000	EditHapus
5	BRG-0009	Sabun Ekonomi	Sabun & Pembersih	Bungkus	58	Rp3.000	Rp174.000	EditHapus
6	BRG-0010	Kerupuk Natasya	Minuman & Makanan Ringan	Bungkus	79	Rp19.000	Rp1.501.000	EditHapus
7	BRG-0011	Sprite	Minuman & Makanan Ringan	Botol	113	Rp7.000	Rp791.000	EditHapus
8	BRG-0012	Wafello	Minuman & Makanan Ringan	Bungkus	10	Rp8.000	Rp80.000	EditHapus
9	BRG-0013	Good day	Kopi, Teh & Coklat	Sachet	300	Rp3.000	Rp900.000	EditHapus
10	BRG-0014	Top Gula Aren	Kopi, Teh & Coklat	Sachet	210	Rp2.000	Rp420.000	EditHapus
11	BRG-0015	Kopi Kapal Api 380	Kopi, Teh & Coklat	Bungkus	64	Rp33.000	Rp2.112.000	EditHapus
12	BRG-0016	Tepung Terigu	Beras & Bahan Pokok	Kilogram (kg)	97	Rp11.000	Rp1.067.000	EditHapus

Admin goods reports page



KOPERASI

Dashboard

Data Bon

Data Barang

Kategori Barang

Data Anggota

Tagihan

Logout

Admin



Kategori Barang

Nama kategori

Tambah

No	Nama Kategori	Aksi
1	Beras & Bahan Pokok	Edit Hapus
2	Bumbu & Rempah	Edit Hapus
3	Makanan Siap Saji	Edit Hapus
4	Sabun & Pembersih	Edit Hapus
5	Roti & Kue	Edit Hapus
6	Makanan Bayi	Edit Hapus
7	Kacang-kacangan & Biji-bijian	Edit Hapus
8	Minyak Goreng & Santan	Edit Hapus
9	Gula, Garam & Pemanis	Edit Hapus
10	Kopi, Teh & Coklat	Edit Hapus

Menampilkan 1 sampai 10 dari total 18 kategori

Showing 1 to 10 of 18 results

1

2

Admin Categories Page

Data Anggota

Cari nama anggota... Carit Reset Export PDF

[+ Tambah Anggota](#)

No	Nama	Email	No HP	Jabatan	Status	Aksi
1	kusmira	kusmira696@gmail.com	082385267874	Karyawan	Aktif	Edit Hapus
2	ramadani	putriselatpanjang22@gmail.com	083476872312	KTU	Aktif	Edit Hapus
3	sonia sahara	soniasahara71@gmail.com	098765451234	Pengawas	Aktif	Edit Hapus
4	Maizatul Kurnia Saputri	maizatulkurnia78@gmail.com	081266683721	Sekretaris	Aktif	Edit Hapus
5	kamella	Kamellia00820@gmail.com	098765784312	Bendahara	Aktif	Edit Hapus
6	Sartika	manjo2509@gmail.com	082388123018	Karyawan	Aktif	Edit Hapus
7	Halim	kusmira75@gmail.com	082268723174	KTU	Aktif	Edit Hapus
8	Pak Wahyat	wahyatmkorn@gmail.com	0876546778	KTU	Aktif	Edit Hapus
9	akhyaridina	akhyaridina@gmail.com	082280697588	Sekretaris	Aktif	Edit Hapus
10	utari elfita	utarielfita561@gmail.com	082286075017	Karyawan	Aktif	Edit Hapus

Showing 1 to 10 of 10 results

[Logout](#)

Admin Member Data Page

Data Tagihan

[Ubat Lunas](#) [Ubat Belum Lunas](#) [Semua](#)

Semua anggota yang melakukan bon sudah memiliki tagihan.

[+ Tambah Tagihan](#)

Nama Anggota	Email	No HP	Total Tagihan	Jatuh Tempo	Status	Aksi
Maizatul Kurnia Saputri	maizatulkurnia78@gmail.com	081266683721	Rp39.000	15 July 2025	Belum	Hapus Edit Kirim Email
Pak Wahyat	wahyatmkorn@gmail.com	0876546778	Rp497.000	21 July 2025	Belum	Hapus Edit Kirim Pengingat Usang
ramadani	putriselatpanjang22@gmail.com	083476872312	Rp180.000	16 July 2025	Belum	Hapus Edit Kirim Email
Halim	kusmira75@gmail.com	082268723174	Rp516.000	24 July 2025	Belum	Hapus Edit Email Terkirim
sonia sahara	soniasahara71@gmail.com	098765451234	Rp129.000	25 July 2025	Belum	Hapus Edit Email Terkirim
kamella	Kamellia00820@gmail.com	098765784312	Rp374.000	25 July 2025	Belum	Hapus Edit Email Terkirim
kusmira	kusmira696@gmail.com	082385267874	Rp59.000	13 July 2025	Belum	Hapus Edit Email Terkirim
Sartika	manjo2509@gmail.com	082388123018	Rp969.000	31 July 2025	Belum	Hapus Edit Email Terkirim
akhyaridina	akhyaridina@gmail.com	082280697588	Rp262.000	31 July 2025	Belum	Hapus Edit Email Terkirim
utari elfita	utarielfita561@gmail.com	082286075017	Rp501.000	31 July 2025	Belum	Hapus Edit Email Terkirim

[Logout](#)

Admin bills data Page

laporan-bon(26).xlsx [Protected View] - Excel

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

PROTECTED VIEW Be careful—files from the Internet can contain viruses. Unless you need to edit, it's safer to stay in Protected View. [Enable Editing](#)

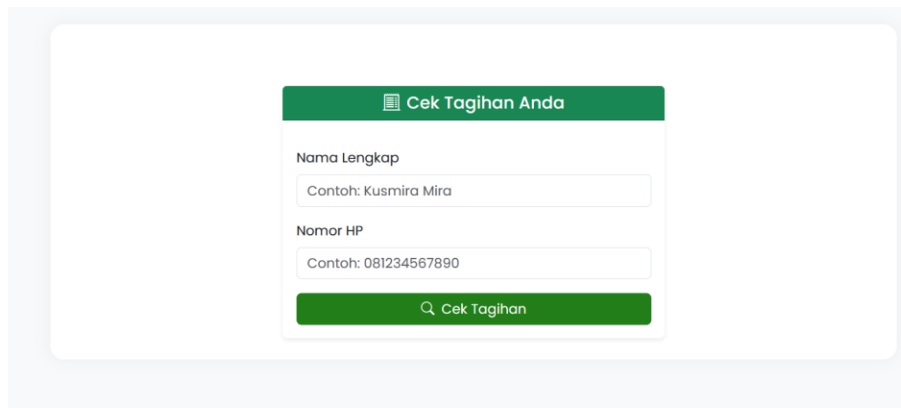
No	Nama Anggota	Januari	Februari	Maret	April	Mei	Juni	Juli	Agustus	September	Oktober	November	Desember
1	sonia sahara						129.000,00	762.000,00					
2	ramadani						180.000,00						
3	kusmira						59.000,00						
4	Maizatul Kurnia Saputri						39.000,00						
5	Sartika						854.000,00						
6	kamella						374.000,00	269.000,00					
7	Halim						516.000,00						
8	Nora Susanti							955.000,00					
9	Pak Wahyat							497.000,00					

Export results to Microsoft Excel

Fig 4. Admin Interfaces

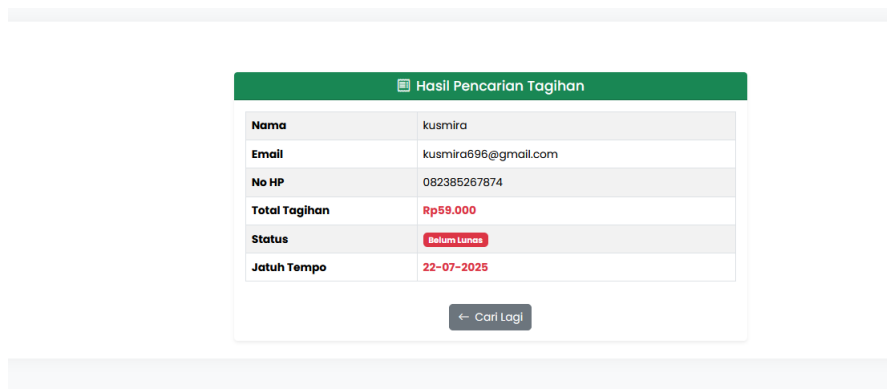
2. Employee Interfaces

On the employee dashboard page, a column will appear to enter the name and cellphone number for the purpose of viewing the bill.



The interface shows a form titled "Cek Tagihan Anda" (Check Your Bill). It contains two input fields: "Nama Lengkap" (Full Name) with a placeholder "Contoh: Kusmira Mira" and "Nomor HP" (Phone Number) with a placeholder "Contoh: 081234567890". Below the fields is a green button labeled "Cek Tagihan" with a magnifying glass icon.

Employee bill check page



The interface shows the search results titled "Hasil Pencarian Tagihan". It displays a table with the following data:

Nama	kusmira
Email	kusmira696@gmail.com
No HP	082385267874
Total Tagihan	Rp59.000
Status	Belum Lunas
Jatuh Tempo	22-07-2025

Below the table is a button labeled "← Cari Lagi" (Search Again).

Employee Bills



The interface shows an email notification titled "Tagihan Koperasi" (Cooperative Bill). It includes a greeting "Halo utari elfita," and a message "Berikut ini adalah rincian tagihan Anda:" (Here is the detail of your bill:). Below the message is a table with the following data:

Nama Barang	Jumlah	Harga Satuan	Subtotal
Kopi Kapal Api 380	3	Rp33.000	Rp99.000
Pop Mie	4	Rp6.000	Rp24.000
Sprite	4	Rp7.000	Rp28.000
Beras SPHP 5kg	5	Rp70.000	Rp350.000
Total Tagihan:			Rp501.000

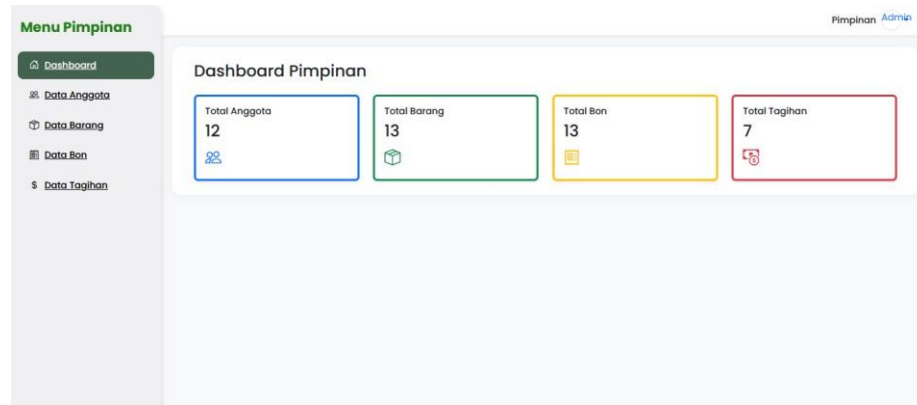
Below the table, it states "Status: Belum" (Status: Not yet) and "Jatuh Tempo: 31-07-2025" (Due Date: 31-07-2025). A message follows: "Segera lakukan pembayaran sebelum jatuh tempo. Terima kasih." (Make payment immediately before due date. Thank you.). At the bottom, there is a reply button labeled "Balas" (Reply).

Employee Email Notification Results Display

Fig 5. Employee Interfaces

3. Owner Interface

On this page, managers can see the dashboard menu, receipt data, member data, goods data, and billing data, managers can see the data inputted by the admin, managers can also export data



Owner Interface

4. Functional Testing

Functional testing was conducted using the Black Box Testing method. Each feature was tested to ensure it performs according to the specified requirements.

Table 1. Table BlackBox Testing Result

Module	Expected Output	Actual Output	Result
Login	Valid users can log in successfully	Successful	Pass
Transaction Input	Save purchase and sales data	Successful	Pass
Payroll	Calculate employee salaries automatically	Successful	Pass
Bills Management	Record and display farmer loans	Successful	Pass
Report Generation	Export data into PDF reports	Successful	Pass
...	...	...	...

All test cases passed successfully, giving the system a 100% success rate in functionality verification. This indicates that each module performs correctly and interacts properly within the database.

4.2. Discussion

The developed application has proven to work properly and effectively supports the operations of Koperasi Maju Bersama PT. Priatama Riau. It improves work efficiency by automating processes that were previously done manually, reducing errors, and saving time. All main features, including data management, transaction recording, and report generation, function as intended and contribute to smoother daily operations. With this system, employees can complete tasks more quickly and focus on essential cooperative activities. Overall, the application enhances the productivity, accuracy, and transparency of the cooperative's operations, making it a valuable tool in supporting digital transformation at Koperasi Maju Bersama PT. Priatama Riau.

4. CONCLUSION

Based on the research and development results, the following conclusions were reached:

1. The application successfully addressed the manual record-keeping issues previously used by the Maju Bersama Cooperative, PT. Priatama Riau.
2. The application facilitates the administrator's ability to manage receipt data, goods data, member data, and receipt reports digitally, quickly, and accurately.
3. The email notification feature effectively reminds cooperative members to make payments before the due date.
4. The application improves member discipline and enhances the orderliness of cooperative administration.
5. Data management is more organized thanks to an integrated system that is easily accessible to administrators and leaders.

5. ACKNOWLEDGEMENTS

The authors would like to thank the Department of Informatics Engineering, Politeknik Negeri Bengkalis, for the support provided during this research. Gratitude is also extended to friends and family for their encouragement and assistance in completing this study.

6. REFERENCES

- E. Nurlailah and K. R. Nova Wardani, "PERANCANGAN WEBSITE SEBAGAI MEDIA INFORMASI DAN PROMOSI OLEH-OLEH KHAS KOTA PAGARALAM," *JIPI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)*, vol. 8, no. 4, pp. 1175–1185, Nov. 2023, doi: 10.29100/jipi.v8i4.4006
- D. Handayani and M. Salam, "Aplikasi Koperasi Berbasis Website Menggunakan Metode Waterfall," 2023. [Online]. Available: <https://djournals.com/klik>
- B. Harahap, "Sosialisasi Bimbingan Teknis Advokasi Kepatuhan Koperasi Bagi Gerakan Koperasi Kota dan Kabupaten," *Mejuajua: Jurnal Pengabdian pada Masyarakat*, vol. 2, no. 2, pp. 5–10, Dec. 2022, doi: 10.52622/mejuajuaabdinas.v2i2.55
- M. Mustika Rini and A. Rohman, "PT. Media Akademik Publisher PENERAPAN TEKNOLOGI INFORMASI DALAM MANAJEMEN," *JMA*, vol. 2, no. 6, pp. 3031–5220, 2024, doi: 10.62281.
- F. Mustafa and I. Komputer, "PERANCANGAN SISTEM MANAJEMEN PENJADWALAN RAPAT BERBASIS WEB DENGAN FITUR NOTIFIKASI," 2024.
- A. M. Wilhelmus and Marselino Devin, "Penerapan BVA dan EP pada Aplikasi Pencatatan Bahan dan Produksi," 2024.
- A. Zalukhu *et al.*, "PERANGKAT LUNAK APLIKASI PEMBELAJARAN FLOWCHART," *Jurnal Teknologi Informasi dan Industri*, vol. 4, no. 1, 2023.

- A. Stmik and T. Bangsa, "SISTEM INFORMASI PENOMORAN KARTU BON KOPKARBARA PT.BUKIT ASAM (PERSERO) TBK, BANDAR LAMPUNG BERBASIS WEB," 2020.
- Y. Putria Intan Nikmah, "PRAKTIK KAS BON TERHADAP PEKERJA PERSPEKTIF MAQA>S}ID SHARI>>'AH (STUDI KASUS PEKERJA DI DESA SELUR KECAMATAN NGRAYUN KABUPATEN PONOROGO)," 2022.
- R. Putra Mugiadi and O. Rusmana, "Bibliometrik Analisis: Dinamika dan Tren Penelitian Pada Penelitian tentang Koperasi," *EKOMA : Jurnal Ekonomi*, vol. 3, no. 5, 2024.
- S. Nasution, S. Hidayati, and P. Rahmadani Nasution, "As-Syirkah: Islamic Economics & Finacial Journal Peranan Koperasi dalam Perekonomian Indonesia," 2024, doi: 10.56672/assyirkah.v3i2.160.
- A. Wibisono Informatika, "FILTERING SPAM EMAIL MENGGUNAKAN METODE NAIVE BAYES," 2023.
- R. Salam and A. Kho, "Pengaruh Manajemen Pemasaran Virtual Terhadap Produk UMKM," *Jurnal MENTARI: Manajemen, Pendidikan dan Teknologi Informasi*, vol. 1, no. 2, pp. 198–207, Feb. 2023, doi: 10.34306/mentari.v1i2.272.
- E. R. Rahmi, E. Yumami, and N. Hidayasari, "Analisis Metode Pengembangan Sistem Informasi Berbasis Website: Systematic Literature Review," *remik*, vol. 7, no. 1, pp. 821–834, Jan. 2023, doi: 10.33395/remik.v7i1.12177.
- M. Nuh *et al.*, "PENYULUHAN MENGELOLA WEBSITE SEBAGAI MEDIA PUBLIKASI, KOMUNIKASI DAN INFORMASI PADA PESANTREN HIDAYATULLAH JONGGOL," 2022.
- S. M. Pulungan, R. Febrianti, T. Lestari, N. Gurning, and N. Fitriana, "Analisis Teknik Entity-Relationship Diagram Dalam Perancangan Database," vol. 01, no. 2, pp. 143–147, 2023, doi: 10.47233/jemb.v2i1.533.
- A. Munir, "APLIKASI MANAJEMEN PEMBAYARAN DANKAS BON PADA PERCETAKAN ATM.COM BERBASIS WEB ," 2023.
- noviantoro Agung, "RANCANGAN DAN IMPLEMENTASI APLIKASI SEWA LAPANGAN BADMINTON WILAYAHDEPOK BERBASIS WEB," 2022.
- D. Cisco Pradithya and D. Prima Mulya, "Interactive Building Mapping Berbasis Web untuk Visualisasi Dinamis dan Manajemen Data Lokasi Toko Bangunan," *JISKA: Jurnal Sistem Informasi Dan Informatika*, vol. 3, no. 1, p. 54, 2025, [Online]. Available: <http://jurnal.unidha.ac.id/index.php/jiska>
- M. Ikhsan, Helmina, Z. Akbar, R. Dani, and O. Ediansa, "Sosialisasi dan Pelatihan Framework Codeigniter Untuk Mahasiswa Universitas Muhammadiyah

- Jambi,” *ASPIRASI : Publikasi Hasil Pengabdian dan Kegiatan Masyarakat*, vol. 2, no. 1, pp. 70–76, Dec. 2023, doi: 10.61132/aspirasi.v2i1.138.
- H. Shafira Anggraheni, A. Putra Kharisma, and P. P. Adikara, “Eksperimen Penerapan Framework Desain User Interface untuk Lanjut Usia pada PLN Mobile untuk Meningkatkan Usability kepada Pengguna Pra-Lanjut Usia,”
- L. Setiyani, “Desain Sistem : Use Case Diagram,” 2021
- V. Fatmawati, P. Setiaji, and N. Latifah, “Smart Parking And Terminal Management Sistem Retribusi Berbasis Web Di Bakalan Krapyak,” 2025.
- Khesya Nurhaliza, “MENGENAL FLOWCHART DAN PSEUDOCODE DALAM ALGORITMA DAN PEMROGRAMAN,” 2021.
- fadhil Alif priyatno, “PENGEMBANGAN APLIKASI DASHBOARD ADMIN BERBASIS WEBSITE UNTUK MANAJEMEN PENGGUNA MENGGUNAKAN REACT,” 2025.
- M. Riski and M. Ropianto, “RISKI Entity Relationship Diagram & Praktik
- M. Riski and M. Ropianto, “RISKI Entity Relationship Diagram & Praktik DBMS,” 2021
- K. TERBAIK Odelia, D. Pratama, and U. Multi Data Palembang, “Jurnal Rekayasa Sistem Informasi dan Teknologi Volume 2, No 3-Februari 2025 e- ISSN : 3025-888X,” 2025.
- S. W. Ramdany, S. Aulia Kaidar, B. Aguchino, C. Amelia, A. Putri, and R. Anggie, “Penerapan UML Class Diagram dalam Perancangan Sistem Informasi Perpustakaan Berbasis Web,” 2024.
- B. Simare Mare, A. A. Yana, and U. N. Mandiri, “PERANCANGAN SISTEM INFORMASI BERBASIS WEB PADA KOPERASI SIMPAN PINJAM SEJAHTERA BERSAMA,” Online, 2022.
- R. Yosli, “Meningkatkan Kapasitas Hosting, Mengelola Content Management System Untuk Kenyamanan Memakai Website Berbayar,” *JAVIT : Jurnal Vokasi Informatika*, pp. 31–37, Jun. 2021, doi: 10.24036/javit.v1i2.6.
- K. Menggunakan Vercel Dan Niagahoster, M. A. Koko Arizal A, I. Kurniasari, and Y. Bismo Utomo, “HOSTING WEBSITE MODERN SMK AL-AMIEN KOTA,” 2024.[Online].Available:<https://conferenceproceedings.um.ac.id/index.php/psssh/issue/view/>
- M. Muharam and A. G. Persada, “Implementasi Penggunaan Website Sebagai Media Informasi dan Media Pemasaran Hasil Pertanian dan Peternakan Desa Sumberejo,” 2020. [Online]. Available: www.desasumberejo.com.S. Achmady, L. Qadri