



Web Based Accounting Information System Application Design with Prototype Method (Study on The National Flagship Cooperative of Prosperous Green Farmers)

Neny Desriani^(✉), Harsono Edwin Puspita, Aulia Ramadina Salsabila,
Mutiasari Nur Wulan, and Hilda Ratna Dewi

Accounting, Lampung University, Bandar Lampung, Lampung, Indonesia
neny.desriani@feb.unila.ac.id, harsono.edwin@unila.ac.id

Abstract. This study develops a program for the Tani Hujau Makmur Cooperative in Tanggamus Regency, Lampung Province, to create a web-based cooperative accounting information system application in an effort to assist the community, particularly cooperatives. The application design method used is the prototyping method. The output of this research is a web-based application called SIKOP THM (Information System for the Tani Hijau Makmur Cooperative). This research is expected to have a real contribution to the world of cooperatives, especially in terms of digitizing information systems so that it can provide convenience for the managers of the Tani Hijau Makmur Cooperative in carrying out their business activities, and can even become a role model for the application of producer cooperatives which are still very rare, compared to other types of cooperatives such as savings and loan cooperatives and consumer cooperatives .

Keywords: cooperative · accounting · information · system · application · digitization

1 Introduction

Technological transformation in the era of the Industrial Revolution 4.0 has created an integration between the physical, digital and biological worlds and revolutionized the human way of life [1]. In this current era, human resources are expected to have competencies that are in accordance with the latest technological developments through skill-up programs or skill enhancement or skills renewal (re-skilling) [2, 3]. One of the groups that need to be improved and updated are MSMEs, especially cooperatives, which are generally limited in terms of technology and understanding of accounting concepts.

The Industrial Revolution 4.0 is a new innovation ecosystem that needs to be addressed appropriately by SMEs. Intense competition in the domestic market due to the invasion of foreign products, the low level of national protection for MSMEs, competition in the production factor market, and the competitiveness of MSME products are

challenges for MSMEs [30]. Therefore, MSMEs need cooperation from various stakeholders to solve these problems and challenges. These factors include human resources, capital, technology and equipment management, management and marketing skills, as well as the sustainability of production materials and information technology [5].

Examples of SMEs that require education in the use of technology are cooperatives. Cooperatives are an embodiment of the character of the Indonesian nation which is also a support for the economy in Indonesia. However, in the practice of operational activities and business flow, there are still many manual practices carried out by cooperative workers, so they cannot make time efficient. One of the manual practices is in terms of the accounting system. This will be a problem in decision making because a manual accounting system will be very capable of potentially having errors (human error) so that cooperatives cannot make good decisions if the system they have is not correct. For this reason, components that support cooperatives are needed to be able to solve these problems, namely by digitizing the accounting system.

The Producer Cooperative Tani Hijau Makmur (THM) is a cooperative that has developed in Tanggamus Regency, Lampung Province. This cooperative was officially established on May 17, 2021 where its operational activities are in the field of banana production such as Pisang Mas, Rajabulu, Barangan, and Cavendish which have been successfully exported to Singapore and China and the next export destinations are Korea, Japan, and the Middle East [9]. The operational activities of the Cooperative Tani Hijau Makmur (THM) are still in a manual state including the accounting system, so they often have human errors that result in cooperatives unable to make optimal decisions. This condition provides an impetus for researchers to develop a web and mobile-based Accounting Information System named SIKOP THM (Sistem Informasi Koperasi Tani Hijau Makmur). This study aims to design a cooperative information system program that provides land registration, accounting journaling, member tracking, quality control, as well as financial and non-financial reports. The existence of SIKOP is expected to help improve cooperative governance, as well as increase productivity and reliability of financial reporting made by cooperatives.

2 Literature Review

A. Cooperative

The definition of cooperatives in Law No. 25 of 1992 is a business entity consisting of individuals or a cooperative legal entity based on the cooperative principle as well as a people's economic movement based on the principle of kinship.

B. Accounting Information System

Accounting information system is one of the important systems in an economic institution; each organization has its own characteristics in terms of accounting information systems based on awareness of the importance of information system [9, 10]. The literature shows that accounting information systems are a basic resource for organizations and institutions in the private and public sectors, to deal with the current situation which

is characterized by rapid changes and intensification of competition [11]. For this reason, the design of an accounting information system will greatly affect the validity of the company's financial statements.

III. Digitization and Prototyping

Entrepreneurs started to run and support their business by utilizing information technology and telecommunications. For large companies, the characteristics of adequate resources make large companies digitize faster. However, for cooperatives, this digitization process requires more preparation and resources. This study uses the prototyping method in the design of the application. Stated that prototyping is a physical model of a work system and a software development method that became the first version of the system [14]. This prototyping technique creates a prototype system as an intermediary for application developers and application users in the process of information system development activities. There are four main prototyping methods:

- Illustrate and generate sample reports and screenshots.
- Simulation and simulation of system flow, using temporary data that is not actual.
- Functional, simulating the actual system flow and using actual data.
- Create evolution, part of the operating system model.

3 Research Methods

A. Research Framework

In this study, the system development method used is a prototyping model in application design Koperasi Tani Hijau Makmur. Design focuses on presenting aspects of the application from the user's perspective. This includes aspects of input, process, and output formats. Prototypes are customized to meet user needs, where developers have a clearer and more detailed understanding of what to do (Fig. 1).

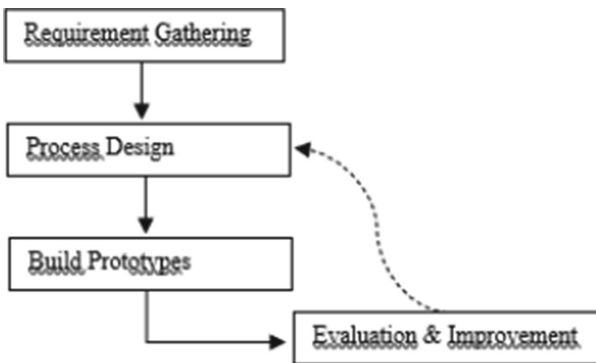


Fig. 1. Prototype Stage

B. Method of Collecting Data

The method used to collect data in this study is to go through the following stages:

1) Literature Study

The literature study collects data from previous studies and takes materials from various references and documents (reference books, scientific journals, and other sources) that are relevant to the concept of an accounting information system at Koperasi Produsen Tani Hijau Makmur, Tanggamus.

2) Observation

The author makes observations of things that are considered relevant, important, and necessary to complete the data needed for making the system. The observation process is carried out by observing and understanding activities so that the problem points can be known in detail.

3) Interview

Interview is a way of collecting data and information face-to-face with resource persons. Interviews were conducted with stakeholders related to the system being built. This interview was conducted through direct meetings with the management and members of Koperasi Produsen Tani Hijau Makmur [18].

4 Result and Discussion

The result of this research is a producer cooperative financial system application which can be accessed at the address kpthm.com. The following is a menu display on the SIKOP THM application (Fig. 2).

A. Main Page

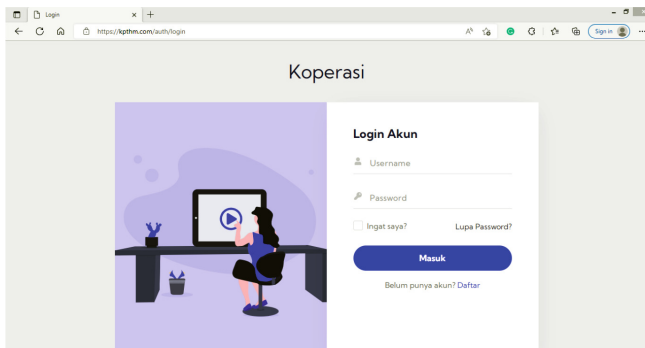


Fig. 2. Login Page

At the main page, there are 3 pages of login, personal biodata and change password page (Figs. 3 and 4).

B. Page as Admin

At the transaction menu include another page. There are purchase transaction menu with the detail, sales data transaction, GGPC receivable repayment transaction, PH debt payment transaction, transportation expense transaction menu, tax expense transaction menu and service revenue transaction (Fig. 5).

Apart from this page, there are others as well as the picture above. Accounting data menu be equipped accounting data menu – detail page, add transaction, trial balance closing, reporting menu – trial balance, reporting menu - SHU reports, owner equity and balance sheets (Fig. 6).

At page of master data menu, there are a lot of page about this menu among them user data page at the picture above, structural data, inventory, inventory type, transaction type, asset type, vehicle data, driver data, data account and sales profit (Figs. 7 and 8).

C. Page as Farmer

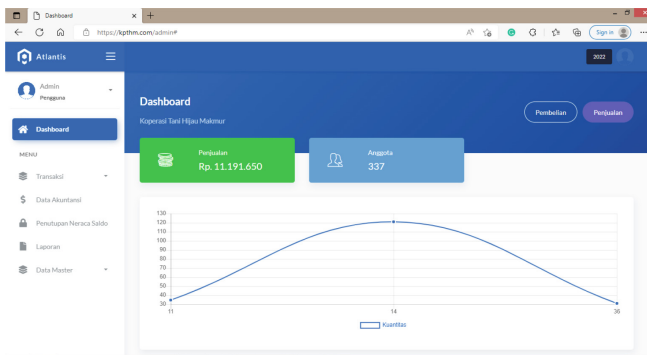


Fig. 3. Dashboard

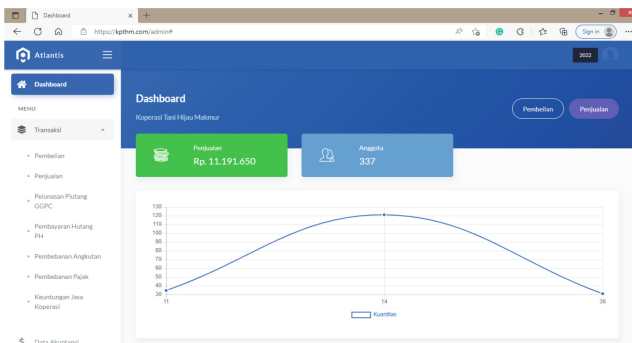


Fig. 4. Transaction Menu

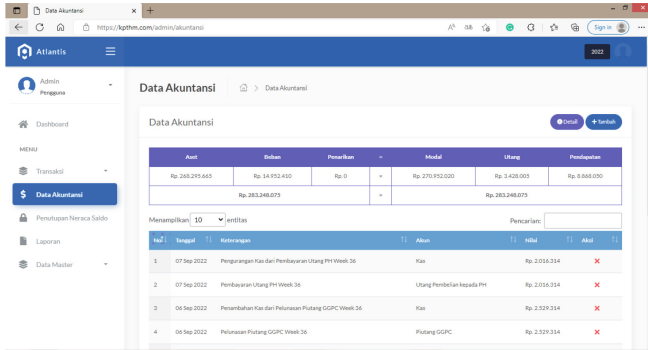


Fig. 5. Accounting Data Menu

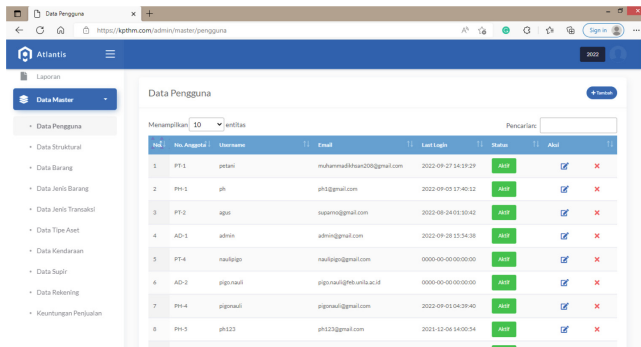


Fig. 6. Master Data Menu – User Data

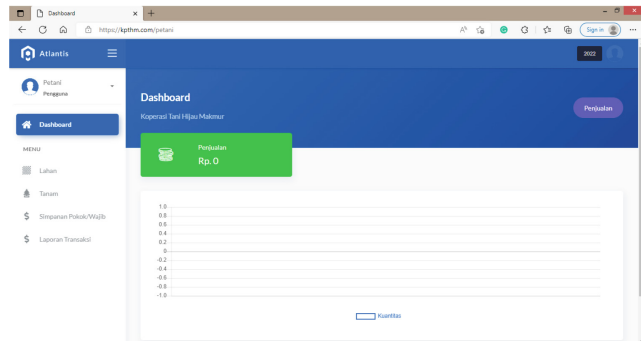


Fig. 7. Dashboard Page

As a farmer, various page are displayed among them are dashboard page, land menu, also plant menu, basic/mandatory savings menu and transaction reports page menu (Figs. 9 and 10).

IV. Page as PH

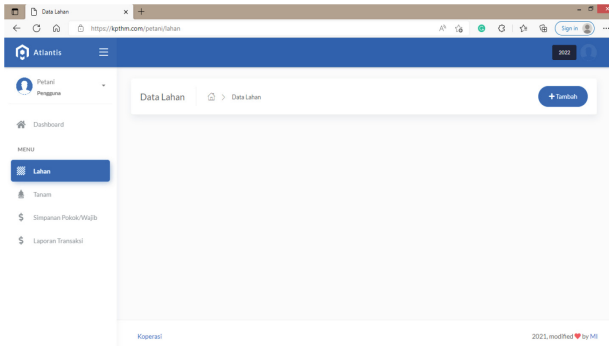


Fig. 8. Land Menu

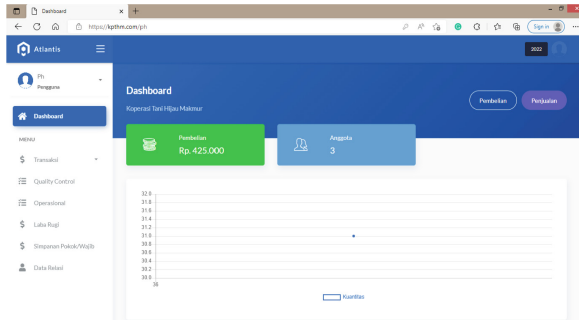


Fig. 9. Dashboard Page

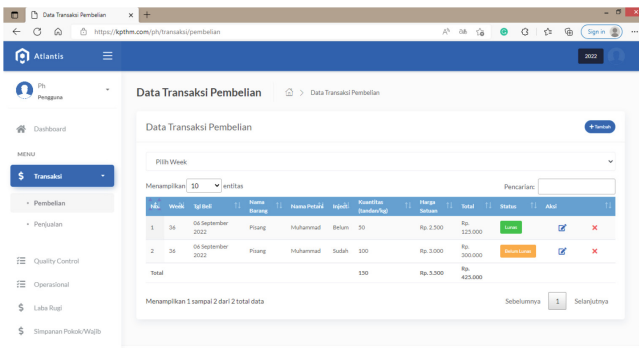


Fig. 10. Transaction Menu – Purchase

As a packing house (PH), various page are displayed among them are dashboard page, transaction menu (purchase and sales), quality control menu, operational menu, profit and loss menu, principal/compulsory savings menu and transaction data page menu.

Acknowledgement. We thank you to Koperasi Modern Tani Hijau Makmur that are partners in this research. Also to FEB UNILA for this research sponsorship fund.

References

1. Afrida, E. a. (2021) 'Peran Digitalisasi Koperasi Sebagai Pendongkrak UMKM Dalam Pengembangan Ekonomi Wilayah Kota Surabaya', *Prosiding Seminar Nasional Ekonomi Pembangunan*, 1(2), pp. 151–158.
2. Altawalbeh, M., Hashem, F. and Alduneibat, K. (2017) 'The Role of Accounting Information Systems in Activating the Role of the Responsibility in the Jordanian Industrial Companies', *Journal of Modern Accounting and Auditing*, 13(01), pp. 1–7. doi: <https://doi.org/10.17265/1548-6583/2017.01.001>.
3. Astuti, R. P., Kartono, K. and Rahmadi, R. (2020) 'Pengembangan UMKM melalui Digitalisasi Tekonolgi dan Integrasi Akses Permodalan', *ETHOS: Jurnal Penelitian dan Pengabdian kepada Masyarakat*, 8(2), pp. 248–256. doi: <https://doi.org/10.29313/ethos.v8i2.5764>.
4. Bismala, L. (2016) 'Model Manajemen Usaha Mikro Kecil dan Menengah (UMKM) untuk Meningkatkan Efektivitas Usaha Kecil Menengah', *Jurnal Enterpreuner dan Enterpreneurship*, 5(1), pp. 19–25.
5. Hadiyati, E. (2011) 'Kreativitas dan Inovasi Berpengaruh Terhadap Kewirausahaan Usaha Kecil', *Jurnal Manajemen dan Kewirausahaan*, 13(1), pp. 8–16. doi: <https://doi.org/10.9744/jmk.13.1.8-16>.
6. Hamdan (2018) 'Industri 4.0: Pengaruh Revolusi Industri Pada Kewirausahaan Demi Kemandirian Ekonomi', *Jurnal Nusantara Aplikasi Manajemen Bisnis*, 3(2), pp. 1–8. doi: <https://doi.org/10.29407/nusamba.v3i2.12142>.
7. Hartono and Hartomo, D. D. (2014) 'Faktor-Faktor Yang Mempengaruhi Perkembangan UMKM di Surakarta', *Jurnal Bisnis dan Manajemen*, 14(1), pp. 15–30. doi: <https://doi.org/10.20961/jbm.v14i1.2678>.
8. Ivančić, L., Vukšić, V. B. and Spremić, M. (2019) 'Mastering the Digital Transformation Process: Business Practices and Lessons Learned', *Technology Innovation Management Review*, 9(2), pp. 36–51. doi: <https://doi.org/10.22215/TIMREVIEW/1217>.
9. Kemenkeu (2021) Pemerintah Terus Perkuat UMKM Melalui Berbagai Bentuk Bantuan. Available at: www.kemendikopukm.go.id/ (Accessed: 13 March 2022).
10. Kominfo (2020) Sektor UMK, Salah Satu Pendorong Utama Pemulihan Ekonomi Nasional. Available at: <https://kominfo.go.id/content/detail/31063/sektor-umk-salah-satu-pendorong-utama-pemulihan-ekonomi-nasional/0/berita> (Accessed: 13 March 2022).
11. Munizu, M. (2013) 'Strategi Peningkatan Kinerja Dan Peran Usaha Kecil dan Menengah (UKM) Pengolah Produk Berbasis Pangan', *Manajemen & Bisnis*, 12(1), pp. 101–110.
12. Naeshela, F. (2016) 'Peranan Koperasi Simpan Pinjam Credit Union (CU) Femung Pebaya Cabang Mentarang Di Kecamatan Mentarang Kabupaten Malinau', *eJournal Pemerintahan Integratif*, 4(3), pp. 354–366.
13. Noor, A., Noor, M. and Kurniasari (2022) 'Penerapan Digitalisasi Pada Koperasi Budi Utomo Desa Batu Ampar', *JOUTICA*, 7(1), pp. 531–536.

14. Nursanti, E. et al. (2018) 'Penerapan Sistem Informasi Terintegrasi Untuk Meningkatkan Kinerja UKM Pengrajin Sulam', *Jurnal Teknologi Dan Manajemen Industri*, 4(2), pp. 18–23. doi: <https://doi.org/10.36040/jtmi.v4i2.240>.
15. Pribadi, D. et al. (2016) 'Sistem Informasi Koperasi Berbasis Web', *Jurnal Teknik Komputer AMIK BSI*, 1(2), pp. 186–196.
16. Rohida, L. (2018) 'Pengaruh Era Revolusi Industri 4.0 terhadap Kompetensi Sumber Daya Manusia', *Jurnal Manajemen Bisnis Indonesia*, 6(1), pp. 114–135.
17. Sihaloho, N. T. P., Silalahi, M. and Sujendra, B. (2020) 'COVID-19: Policy Evaluation to Protect Communities Through Social Safety Net', *JPPUMA Jurnal Ilmu Pemerintahan dan Sosial Politik Universitas Medan Area*, 8(2), pp. 124–133. doi: <https://doi.org/10.31289/jppuma.v8i2.3866>.
18. Walid, W. and Alamsyah, A. (2020) 'Sistem Informasi Manajemen Koperasi (Simkop) untuk Koperasi Pegawai Republik Indonesia Kota Semarang', *PRISMA, Prosiding Seminar Nasional*, pp. 222–229.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

