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A Savings Application Design Concept Model in Website-Based Cooperative Units

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ABSTRACT

Data Processing of data for cooperative operational activities such as, the process of savings, loans, and installments that still use manual calculations. Incoming data is still recorded so that it takes a long time for the next process so that it is less efficient and sometimes errors occur in data entry. From the three problems faced by the La Tansa cooperative, it can be concluded that human resources make mistakes in terms of inputting and calculating data either conventionally or using a computer, therefore the best solution to overcome these problems is the creation of a website-based savings and loan cooperative system, which includes the member registration process, the deposit process, the loan process, the installment process, and there are also reports. To overcome this, a system is needed to expedite and speed up these activities so that in the data entry process there are no errors. Extreme Programming modeling is the method that will be used by researchers to create the system, while for the data collection process, interviews, observations, and documentation are used. The tools used are php programming language, MySQL database and for system development using DFD (Data Flow Diagram). The expected result is a savings and loan cooperative information system and the computational process for the cooperative system can be implemented.

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INTRODUCTION

In the globalization age like now, the society strives to keep improving its ability to achieve the goal it wants, with the best possible time and efficiency[1], as well as lower costs. Many sectors such as marketing and transportation are already using applications for transactions[2]. The field of savings and loan cooperatives should be no exception. Judging from its history, the cooperative was indeed born as a business with the aim of advancing common economic interests, which is the economic interest of its members[3].

Based on Law of the Republic of Indonesia No.25 of 1992, Cooperative is a social economic entity with members of people or cooperative legal entities based on cooperative principles as well as a people's economic movement based on family principles (Session 1 Chapter 1)[4]. Cooperatives base their activities on Pancasila and the 1945 Constitution and are based on the principle of family[5].

The website is a universal platform which is currently the basis for every activity or activity, be it transactional or non-transactional[6]. Apart from realtime, the website is considered to be able to provide services simultaneously in different places. For this reason, it is very important for companies that have a wide network to be able to work optimally[7].

A cooperative is a form of joint venture in which it is divided into 2 elements, namely business orientation and banking. There will be many transactional features, this is because in addition to being able to make buying and selling transactions, users can also save money like saving money in a bank. As said in the previous paragraph, the website platform is very helpful for such transactional services[8].

If associated with technological developments, a system is needed that simplifies performance, especially in cooperative operational activities, which is by utilizing internet technology[4][9]. Inputting and storing data such as saving data, loan data and installment data as well as making various[10]. The above is a problem that occurs in La Tansa cooperatives and is an initial problem faced by most cooperatives that are still conventional.

Beside the problem of inputting and storing, there are other problems faced by this cooperative. That is, having calculation problems in the process of deposits, loans and installments. Calculations are still an issue because in this process the calculations are still manual. In addition, sometimes the calculations already use the system but there are still errors from the user's side. Another problem is the data storage process, which still uses the written method by storing in archives in the cupboard. Meanwhile, those who use the system are stored in a computer but there is still a lot of data accumulation.

La Tansa Cooperative has some processes that already use a computer system, using Microsoft Excel as a tool for recording savings and loans that are running also still have some problems, besides not having a database. The error referred to here is a data input error by the user, not from the Microsoft Excel system. A common error is recording loan payments.

From the three problems faced by the La Tansa cooperative, it can be concluded that human resources make mistakes in terms of inputting and calculating data either conventionally or using a computer, therefore the best solution to overcome these problems is the creation of a website-based savings and loan cooperative system, which includes the member registration process, the deposit process, the loan process, the installment process, and there are also reports. This development is in the form of a user interface for members and supervisors, the addition of features for calculating the remaining profit and monthly reports, and a submission system that can be done by cooperative members themselves. The last problem faced by this cooperative is the process of delivering information to members who tend to take a long time. Especially in terms of loan applications. Cooperative members who apply for a loan certainly hope that the response to the application they submit can be processed immediately. So it can be

concluded from previous research that there is an update or uniqueness in this research, namely a notification via WhatsApp regarding loan applications.

METHOD

Extreme Programming is a software engineering technique that is widely used to develop applications by software developers. The main values of system development with Extreme Programming methodology includes Communication, Simplicity, Feedback, Courage and Respect[11].

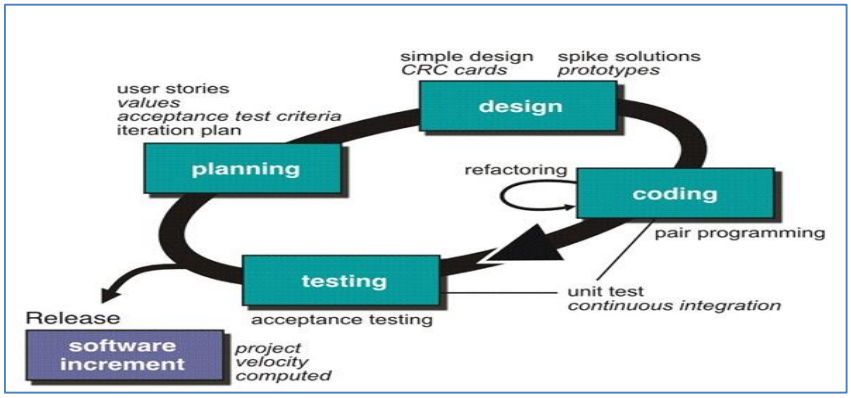

Figure 1. Diagram of Stages in Extreme Programming Method

The planning stage starts with learning the business context of the application, identifying outputs, features in the application, functions of the application created, determining the time and cost of application development and the application development route.

This design stage focuses on simple application design. In this system design stage, we will use the Data flow diagram tool as a tool to design the system process that will occur so that it forms a system that matches the needs[12].

In the coding process of making this application system, the PHP, HTML, JavaScript programming languages are used. Using Firebase Bootstrap and data processing using mySQL[13].

This testing stage focuses on testing the features in the application so that there are no errors. The methods used in the process of testing this application are the Black Box Testing method and the UAT (User Acceptance Test) testing method[14].

Black box testing is a test that allows software engineers to obtain a set of input conditions that fully use all functional requirements for a program[15]. User Acceptance Testing is a test conducted by end-users where the user is a company employee who directly interacts with the system and verifies whether the existing functions have run according to their needs / functions. whether the existing functions have run according to their needs or functions.

RESULT & DISCUSSION

After conducting interviews and observations with the head or treasurer of the cooperative, various problems were found in the cooperative, then a solution was found that could help make it easier for the cooperative to carry out the savings and loan process easily, namely by creating a website-based savings and loan cooperative application that could accelerate activities in the cooperative.

Then In accordance with the problems that have been explained, a data flow design using Data Flow Diagram is a graphical representation that describes information flow and information transformation as applied to data flowing from inputs and outputs, and ERD is a diagram to describe the conceptual design of the conceptual model of a relational database. ERD is also a diagram that relates one object to another object from objects in the real world, which is often known as the relationship between entities.

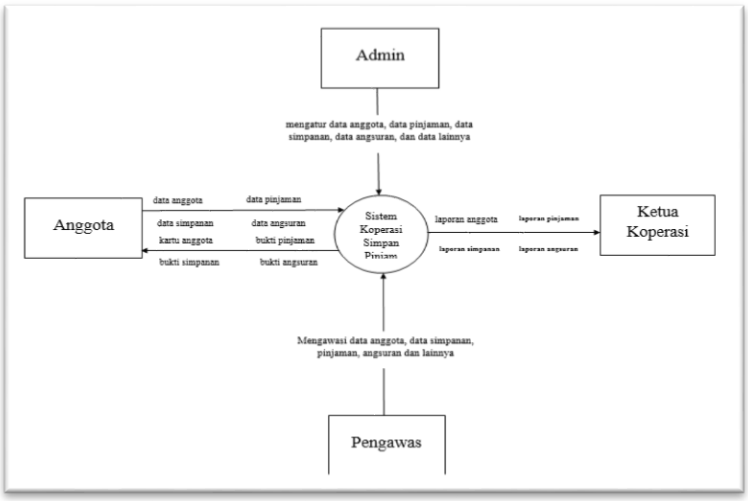

Figure 2, DFD Model on Index 0 and 1

A context diagram is a top-level diagram that describes the system in outline or as a whole. Context diagrams are a special case of data flow diagrams or a subset of data flow diagrams that map environmental modules represented by a single circle that represents the entire system.

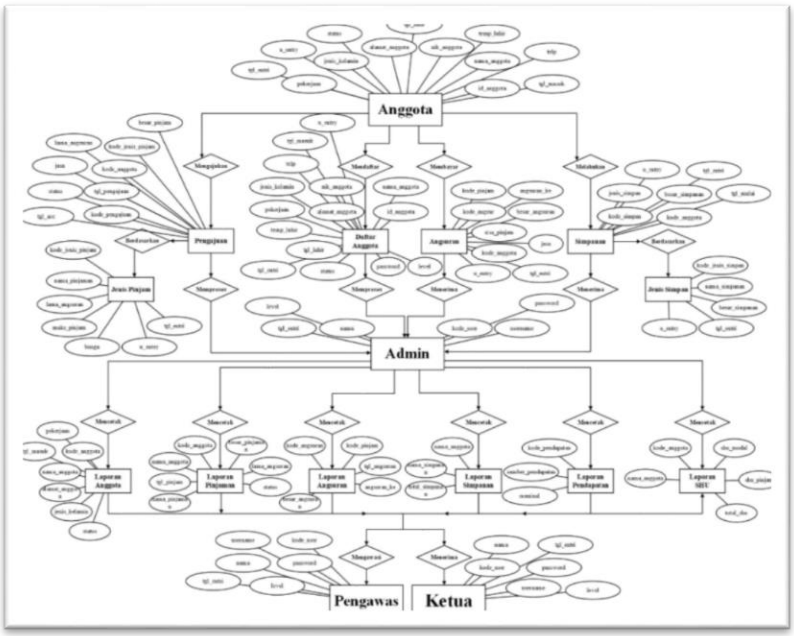

Figure 3, ERD Model for designed platform

The primary thing in developing a system using Extreme Programming is coding. Coding stage is a change of design that has been made into a computer program. The following are the results of the coding process that includes the design of tables and application forms that will be used in the system that has been designed.

The design and conception that has been made is then realized into the creation of the website. The following is a display of the results of the design and planning of the website for admin, supervisors and members.

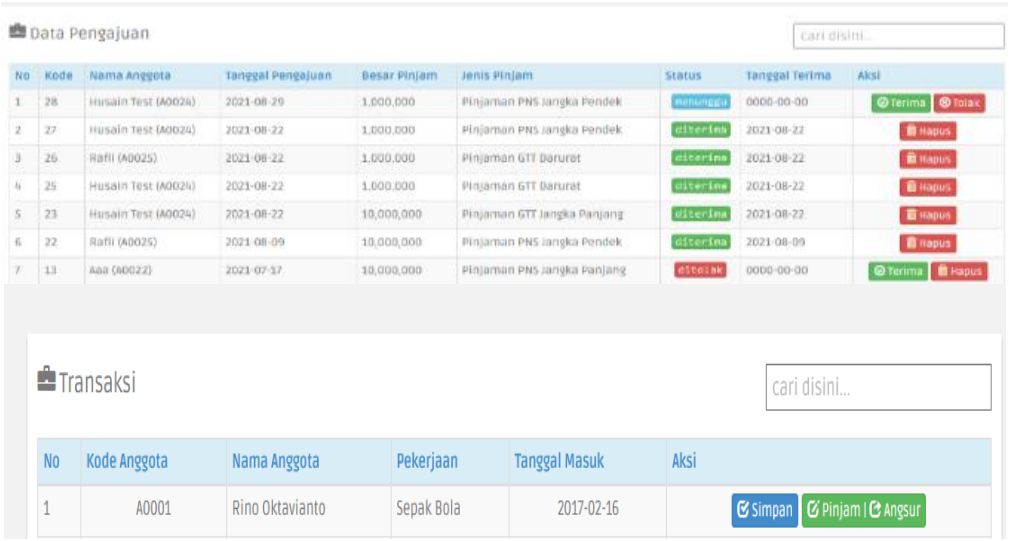

Figure 4, Design platform web-base

Then go to stage focuses on testing the features of the system that has been created, so that there will be no errors. This test is carried out using the UAT (User Acceptance Test) feature. It is done to find out whether the source code written or the modeling that has been done is correct.

Likert scale is a scale that is commonly used in questionnaires and is widely used in survey research. This scale is also used to measure the perceptions, attitudes or opinions of a person or group regarding an event or social phenomenon, based on the operational definitions set by the researcher. This Likert scale has 4 aspects and has its own weight value. Likert scale response points and their value weights are as follows [10] : Strongly Agree (4 points), Agree (3 points), Disagree (2 points), Disagree (1 point).

Table 1, Draft for questioner

No	Question
1	How do you think about the statement that "This savings and loan cooperative application can help cooperative employees"
2	How do you think about the statement "The display design for this savings and loan cooperative application is in line with the needs of the cooperative"
3	How do you think about the statement that "The features in this application are in accordance with what is needed"
4	How do you think about the statement that "The work process of the savings and loan application is easy to understand and operate"
5	How do you think about the statement that "Conceptually the entire savings and loan cooperative application is in accordance with the needs"?

Questionnaire method table addressed to 10 respondents. The number of respondents totaled 10 with the number of questions. From the results of the questionnaire, a summary of the research can be obtained as follows.

Table 2, The results of the assessment of a number of respondents

Aspect	Value				Num of Respons
	SS	S	KS	TS	
1	8	2	0	0	10
2	3	6	1	0	10
3	2	8	0	0	10
4	2	6	2	0	10
5	6	4	0	0	10

Aspect	Index	Category
1	95 %	Strongly agree
2	82,5 %	Strongly agree
3	80 %	Strongly agree
4	75 %	Strongly agree
5	90 %	Strongly agree

Table 14. is the final result of respondent testing which shows that the application with the average results of the index formula as follows: Final Result = (Total Index)/5= (95%+82.5%+80%+75%+90%)/5= 84.5%, so it is included in the category strongly agree. With the results of testing by users who strongly agree, it can be concluded that this system can be applied to the savings and loan cooperative concerned.

CONCLUTIONS

The current cooperative system uses Microsoft Excel, but it is less effective because in terms of human resources (cooperative employees) they still often make mistakes registering loan payments or others, from this error causing losses and protests from cooperative members. Therefore, with this web-based savings and loan cooperative application, it is hoped that it will facilitate the process in the cooperative to avoid errors and be more effective.

In addition to making it easier for admins to handle member data, savings, loans, installments and other ancillary data, this savings and loan cooperative information system also makes it easier for cooperative members to find relevant information about this cooperative.

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REFERENCE

[1] Alma, "Manajemen Pemasaran dan Pemasaran Jasa," Bandung: Alfabeta, 2013, p. 155.

[2] A. A. B. Ginting and D. P. Utomo, "Perancangan Aplikasi Catalog Wisata Di Sumatera Utara Menggunakan Algoritma Rabin-Karp," *KOMIK (Konferensi Nas. Teknol. Inf. dan Komputer)*, vol. 3, no. 1, pp. 57–63, 2019, doi: 10.30865/komik.v3i1.1568.

[3] Kasali, "Membidik Pasar Indonesia Segmentasi Targeting Positioning," Gramedia

Pustaka Utama, 2007, p. 130.

[4] B. Rudianto and Y. E. Achyani, "Rancang Bangun Sistem Informasi Simpan Pinjam Pada Koperasi Berbasis Web," *J. Inf. Syst. Applied, Manag. Account. Res.*, vol. 6, no. 1, p. 77, 2022, doi: 10.52362/jisamar.v6i1.669.

[5] M. R. Aditia, A. Aranta, and P. Astuti, "Sistem Informasi Manajemen Koperasi Siswa SMKN 3 Mataram Berbasis Website," *J. Begawe Teknol. Inf.*, vol. 3, no. 1, pp. 90–100, 2022, doi: 10.29303/jbegati.v3i1.649.

[6] A. B. Wijaya and I. Santiko, "PEMODELAN DAN IMPLEMENTASI DESAIN RESPONSIVE WEBSITE SEBAGAI STANDAR INTERFACE PADA MOBIL," *Prog. Retin. Eye Res.*, vol. 561, no. 3, pp. S2–S3, 2019.

[7] Nuzula Roliana Putri and Tintin Harlina, "Sistem Informasi Penjualan Di Koperasi Siswa Mts Negeri Banyuwangi Berbasis Website," *Jikom J. Inform. dan Komput.*, vol. 12, no. 1, pp. 10–17, 2022, doi: 10.55794/jikom.v12i1.61.

[8] A. M. Pradana, "Analisa Perancangan Sistem Informasi Koperasi Simpan Pinjam Berbasis Website Pada SMKN 5 Madiun," *Semin. Nas. Teknol. Inf. dan Komun.*, pp. 265–276, 2022.

[9] T. Soedarto, F. P. Aditiawan, and G. E. Yuliastuti, "Pendampingan Digitalisasi Usaha Koperasi Unit Desa Sedya Mulya Bojonegoro Berbasis Web," *J. Pengabdi. dan Penerapan IPTEK*, vol. 6, no. 2, pp. 103–110, 2022, doi: 10.31284/j.jpp-iptek.2022.v6i2.3411.

[10] I. Albana and I. Santiko, "Strategi Peningkatan Kemampuan Marketing Melalui Sosial Media Pada UMKM Bangkit Wilayah Banyumas," vol. 1, no. 1, pp. 1–7, 2022.

[11] E. Pudjiarti, D. Nurlaela, and W. Sulistyani, "Sistem Informasi Penjualan Beras Berbasis Website," *Indones. J. Softw. Eng.*, vol. 5, no. 1, pp. 62–74, 2019, doi: 10.31294/ijse.v5i1.5865.

[12] J. W. G. Putra, "Pengenalan konsep pembelajaran mesin dan deep learning," *Comput. Linguist. Nat. Lang. Process. Lab.*, vol. 4, pp. 1–235, 2019, [Online]. Available: https://www.researchgate.net/publication/323700644

[13] Y. Merali, T. Papadopoulos, and T. Nadkarni, "Information systems strategy: Past, present, future?," *J. Strateg. Inf. Syst.*, vol. 21, no. 2, pp. 125–153, 2012, doi: 10.1016/j.jsis.2012.04.002.

[14] Sugiyono, *Metode Penelitian Kombinasi (Mix Methods)*. Bandung: Alfabeta, 2015.

[15] Sukanto; and Salahudin, *Modul Pembelajaran Rekayasa Perangkat Lunak*. Bandung: Modula, 2011.