Journal of Engineering, Electrical and Informatics
Vol.3, No.2 Juni 2023
e-ISSN: 2809-8706; p-ISSN : 2810-055, page 68-83
DOI: https://doi.org/10.55606/jeei.v3i1.1479

Multiuser Based Savings And Loans Information System
(Case Study Of KSU " DANA MANDIRI " Mranggen Demak)

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Abstract*.The increasingly rapid development of computer technology provides convenience for humans in carrying out life activities, this has resulted in the use of computers being an alternative taken by various agencies because it is considered to provide more advantages than disadvantages. Computers are tools to improve performance in various fields. In solving data processing problems at the KSU " DANA MANDIRI " Cooperative, based on the survey carried out, the author tried to change the manual or conventional data processing program into a computer-based data processing program, namely by using the Visual Foxpro 9.0 program. This change aims to provide comfort for operators in carrying out their work. With old programs, conventionally inputting data still takes a long time and when searching for data you still have to look for codes one by one because it cannot be done automatically. With these problems the author tries to formulate the problem, namely "How to make a data processing program to save borrow at KSU " DANA MANDIRI " using the Visual Foxpro 9.0 programming language. The savings and loan data processing process can be accessed quickly and precisely and provides a more attractive appearance. In solving this problem the author tried to collect data related to savings and loan data. In designing a new system, several stages are carried out including data design. Table creation, ERD creation, DFD and normalization. In processing the savings and loan data, it is hoped that it can help with problems that arise at the KSU " DANA MANDIRI " Cooperative and the program created of course still has several weaknesses and shortcomings, this is possible because the author still has little knowledge and experience in programming issues. Suggestions and criticism really help the author to further develop knowledge in this field.*

Keywords*: Information Systems, Definition, Savings and Loans, Multiuser*

1. INTRODUCTION

Nowadays, the development of information technology is increasingly widespread, this is in line with the development of computers which is increasingly rapid day by day. Technology and information are two things that cannot be separated from each other. Rapid technological developments in the development of hardware and software as well as communication technology are alternatives for a company to support good data processing. One of the breakthroughs to overcome technological developments is with computer media. Likewise, the savings and loan transaction process and reporting of company financial data by using a multiuser savings and loan information system will make business processing easier and smoother because the savings and loan information system is a system that can process data and transactions to produce information that is useful for planning, control and streamline business operations.

Received March 20, 2023; Revised April 22, 2023; Accepted May 30, 2023
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The KSU "DANA MANDIRI" Cooperative which is located in Wringinjajar Jago Mranggen Demak is a multi-business cooperative which currently operates in the savings and loan business sector with a total of 6 employees with 1 permanent cashier tasked with providing information to customers who wish to borrow and lend. and 1 savings and loans person whose job is to serve savings and loans, 2 people for the external part, namely looking for customers and billing, 1 person as leader and 1 person on the supervisory board. The number of computers currently available is two, namely one for the administration section, usually used for writing correspondence and one used by the leadership of the KSU Cooperative " DANA MANDIRI ". Currently there are approximately 600 customers.

Customer data on savings, loans, withdrawals and installments can be seen in the table for the last three months.

Data table on types of deposits and number of customers
Source: KSU "MANDIRI DANA" Mranggen Demak

Type of savings	Information	Amount
Time deposit / term savings	1 month – 3 months	20
Voluntary savings	4 months – infinity	150

Data table for loan types and number of customers
Source: KSU " DANA MANDIRI " Mranggen Demak

Loan type	Loan amount	Amount
Term loans	500,000 – 1,000,000	150
Loan	1,000,000 – 2,000,000	125
Loan	2,000,000 – 3,000,000	144
Loan	3,000,000 – 4,000,000	75
Loan	4,000,000 – 5,000,000	67

Customer installment data table

Source: KSU " DANA MANDIRI " Mranggen Demak

Loan type	Loan amount	Number of customers paying in installments	The number of customer s is stuck
Term loans	500,000 – 1,000,000	140	10
Loan	1,000,000 – 2,000,000	119	6
Loan	2,000,000 – 3,000,000	142	2
Loan	3,000,000 – 4,000,000	70	5
Loan	4,000,000 – 5,000,000	63	4

Table 1.4 Customer withdrawal data
Source: KSU " DANA MANDIRI " Mranggen Demak

Loan type	Loan amount	Amount
Term loans	1 month – 3 months	3
Loan	4 months – infinity	15

The savings and loan process, if the data for the requirements is complete, includes a photocopy of the KTP, a photocopy of the original KK and BPKB submitted to the leadership. If approval has been received, money can be issued according to the type of loan, for a process of approximately three days. The data collection process itself still uses book records so entering customers is not fast enough. During the installment process, the customer shows the installment card, after that it is recorded in the installment book and the card brought by the customer will be stamped in full according to the installment date and given a receipt for the installment payment. When searching for data it cannot be fast because it has not been computerized in the form of a database, likewise when making reports the process of making reports is still in the form of written reports which have not been computerized.

With a multiuser-based computer program, convenience will be achieved, including speeding up the process for savings, installment payments and loans, as well as for data searches, there is no need to open the records one by one because the data is already integrated in the database. Making reports if the leader wishes at any time is faster and can be made automatically at any time for new customer reports, installments, borrower data or withdrawals. The author took the title " **MULTIUSER BASED SAVINGS AND LOAN INFORMATION SYSTEM IN THE KSU COOPERATIVE "DANA MANDIRI" MRANGGEN DEMAK.**

2. THEORETICAL BASIS

1. Understanding Systems

In simple terms, a system can be defined as a collection or set of elements, components, or variables that are organized, interact with each other, depend on each other, and are integrated.

System theory in general was first described by Kenneth Boulding, who said that every element that forms an organization is important and must receive complete attention so that managers can act more effectively. From systems theory, futuristic concepts have emerged, including the concept of cybernetics which is related to efforts to automate tasks carried out by humans, giving rise to studies on robotics, artificial intelligence, and so on. The elements that represent a system in general are input, processing and output.

The concept contained in the definition of a system is the concept of synergy. This concept assumes that in a system, the output of the organization is expected to be greater than the individual output or output of each part. [9] This can be interpreted as a joint activity of separate parts, but their interconnectedness together will produce a total effect that is greater than the sum of the parts individually and separately.

A system can be divided into various types of systems, including: open or closed systems, human systems, machine systems, or a combination of human systems and machine systems, deterministic systems or probalistic systems and so on.

3. METHODOLOGY

In conducting research the author used several methods:

2. Method of collecting data

Data processing requires supporting data that must be accurate and precise in order to get good and correct results. The methods or techniques used in the data collection method are:

a. Observation Method

The method of collecting or retrieving data is by observing objects directly and recording things or activities related to these objects. The author made observations at the KSU Cooperative "DANA MANDIRI" regarding the installment system and loan installment payments.

b. Interview Method

The interview method is carried out by conducting questions and answers directly to parties related to the object being researched by the author. The author used this method to obtain precise and definite data by conducting questions and answers to the management or employees of the KSU "DANA MANDIRI" Cooperative so that it can be used as research material.

c. Library Method

The data collection method is by searching for data through books regarding the object being studied as a reference for making proposals. The author collected data by reading books related to savings and loan cooperatives.

d. Archival Method

This method is carried out by reading and studying data through archives within the company. The author uses this method in order to study things or problems that occur at the KSU "DANA MANDIRI" Cooperative.

e. System development methods

The system development method that the author uses is the system development method SDLC

The system development stages include the system life cycle, each part of system development is divided into several work stages. Each of these stages has its own

characteristics. The main stages of the system development life cycle can consist of systems planning (systems plaining), systems analysis (systems analysis), systems design (systems design). Systems selection, systems implementation and systems maintenance.

4. RESULTS AND DISCUSSION

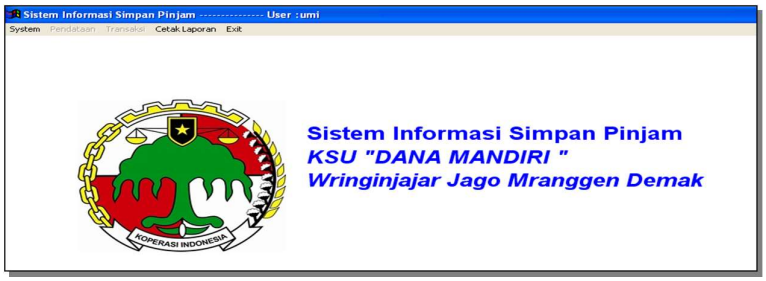
1 . Login Form

Login Form Image

The login form appears the first time the program is run. Usernames are divided into several sections according to their respective duties and authorities, namely leader, cashier, paymaster, savings unit and loan unit. Each user is given the authority to run the menu according to their duties. Leaders can run all the menus available in the report. An example of deactivating a menu can be seen in Figure 4.10 below.

Image of User Access Form

2. Main Menu Display



Main Menu Display Image

The main menu page consists of system information and the main menu provided by the system. The menu consists of:

a. Data collection

(1) Savings Type Data

Used to display the savings type input form

(2) Loan Type Data

Used to display the loan type input form

(3) Customer Data

Used to display the customer data input form.

b. Transaction

(1) Save Data

Used to display the savings input form.

(2) Withdrawal Data

Used to display the withdrawal input form.

(3) Loan Data

Used to display the loan input form.

(4) Installment Data

Used to display the installment input form.

c. Print Report

(1) Customer Reports

Used to display customer data reports.

(2) Customer Savings Report

Used to display customer deposit reports.

(3) Customer Withdrawal Report

Used to display customer withdrawal reports.

(4) Customer Loan Report

Used to display customer loan reports.

(5) Customer Installment Report

Used to display customer installment reports.

d. Exit.

Used to display the exit of an application program.

3. Display the Savings Type Form

Image of Savings Type Form Display

This form is used to enter the types of savings in KSU "Dana Mandiri" Mranggen. The data entered manually is adjusted to the types of savings that already exist and may be further developed in the future.

The function of each existing button is:

a. The add button is used to enter new savings type data

b. The search button is used to search for data to be edited or deleted based on the saved code.

c. The edit button is used to change data.

d. The delete button is used to delete data.

e. The save button is used to save new data entered or data changed through editing.

f. The exit button is used to close the form.

4. Loan Type Form Display

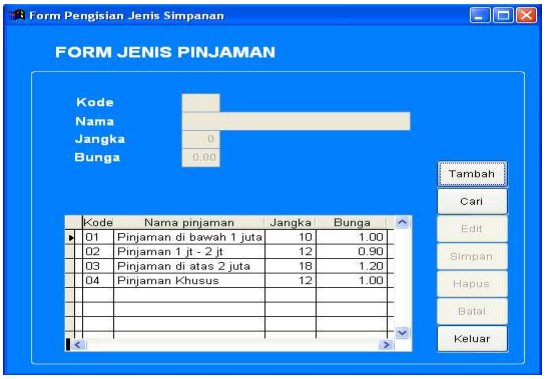


Figure 4.17 Display of loan type form

This form is used to enter data on the types of loans that already exist at KSU "Dana Mandiri" Mranggen. Data is entered manually according to existing loan types and it is possible to add other loan types.

The function of each existing button is:

a. The add button is used to enter new loan type data
b. The search button is used to search for data that will be edited or deleted based on the loan code.
c. The edit button is used to change data.
d. The delete button is used to delete data.
e. The save button is used to save new data entered or data changed through editing.
f. The exit button is used to close the form.

5. Display Customer Data Form

Image of customer data form display

This form is used to enter customer data. The account number will appear automatically according to the type of deposit and the last account number of the customer who registered with the same type of deposit. One account number is used for one type of loan only. The account number format is xx-xxxxx, provided that x is a number and the first two digits are the deposit type code. For customers who choose deposit type 01, the account number also starts with 01 followed by the last account number of the customer who took the same type of deposit plus 1. For example, the last account number for deposit type 01 is 01-00123, the new account number formed is 01 -00124. Likewise for other types of savings.

The list date will be filled automatically according to the system date when the data was saved. The balance information in the grid will change according to transactions that occur during deposits, interest calculations and deposit withdrawals. The function of each existing button is:

a. The add button is used to enter new customer data

b. The search button is used to search for data to be edited or deleted based on account number.
c. The edit button is used to change data.
d. The delete button is used to delete data.
e. The save button is used to save new data entered or data changed through editing.
f. The exit button is used to close the form.

6. Display the Savings Data Form

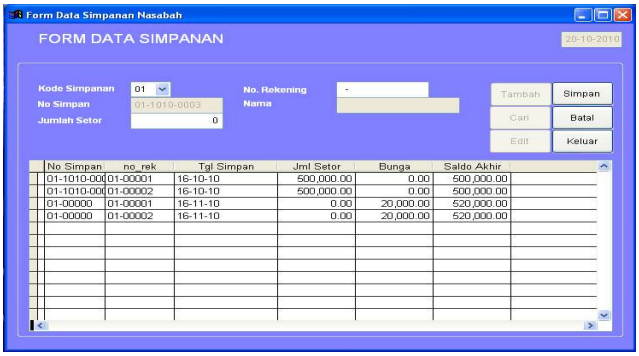


Image Display of savings data form

This form is used to enter the amount of customer savings. The savings number automatically matches the savings code and the last savings number of the customer who has the same savings code. The storage number format is xx-xxxx-xxxx, where x is a number. The two numbers in front are the savings type code, the 4 numbers in the middle are the system month-year format and the last 4 numbers are the savings sequence number. For example, 01-1010-0001 means the savings number for savings code 01, the transaction is month 10 of 2010 with sequence number 0001.

Savings interest will be calculated automatically if the deposit period has been fulfilled. For example, for a 1 month deposit, if it is due one month from the date of deposit, interest will be added automatically.

The function of each existing button is:

a. The add button is used to enter new savings data
b. The search button is used to search for data to be edited or deleted based on the save number.
c. The edit button is used to change data.
d. The delete button is used to delete data.
e. The save button is used to save new data entered or data changed through editing.
f. The exit button is used to close the form.

7. Display the Deposit Withdrawal Data Form

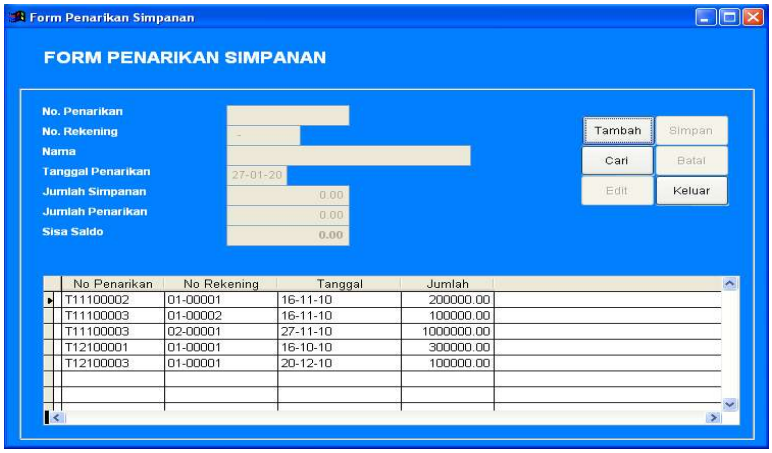


Figure 4.20 Display of deposit withdrawal data form

This form is used to enter the amount of customer deposit withdrawals. The automatic withdrawal number with the deposit number format is Txxxxxxxx, where x is a number. T indicates the number for the withdrawal transaction. The four numbers in front are the system month-year format and the last 4 numbers are the withdrawal sequence number. For example, T10100001 means the transaction withdrawal number for month 10 of 2010 with serial number 0001.

Withdrawals can only be made when they are due. For example, for a 1 month deposit, if it is due one month from the date of deposit, the new deposit can be withdrawn.

The function of each existing button is:

a. The add button is used to enter new withdrawal data
b. The search button is used to search for data to be edited or deleted based on the withdrawal number.
c. The edit button is used to change data.
d. The delete button is used to delete data.
e. The save button is used to save new data entered or data changed through editing.
f. The exit button is used to close the form.

8. Display Loan Transaction Form

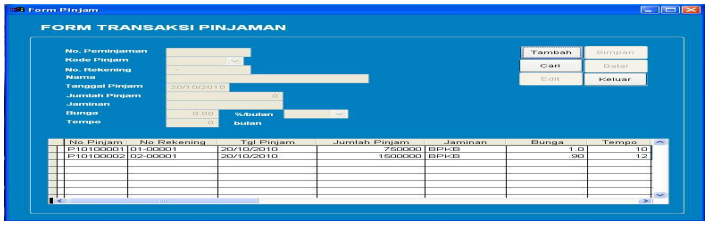


Image Display of loan transaction form

This form is used to enter loan data. Loans can be made by customers who already have an account at KSU "Dana Mandiri". The loan number is filled in automatically in the format Pxxxxxxxx where x is a number. The first four numbers are the month of the system followed by the remainder with the loan sequence number. For example, P10100001 means the loan number made in the 10th month of 2010 with serial number 0001. The loan amount corresponds to the selected loan code. For example, loan code 01 means the maximum loan amount is 1 million rupiah according to the platform specified in the loan type form. Loan interest can be chosen to be flat or decreasing according to the customer's capabilities.

The function of each existing button is:

a. The add button is used to enter new loan data
b. The search button is used to search for data that will be edited or deleted based on the loan number.
c. The edit button is used to change data.
d. The delete button is used to delete data.
e. The save button is used to save new data entered or data changed through editing.
f. The exit button is used to close the form.

9. Installment Data Form Display

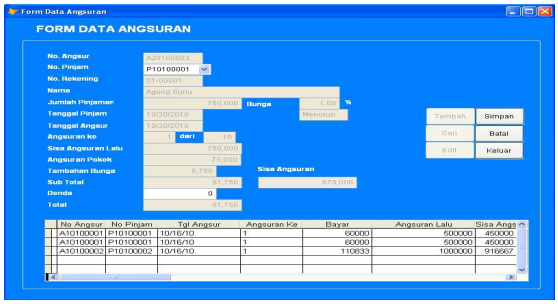


Image of installment data form display

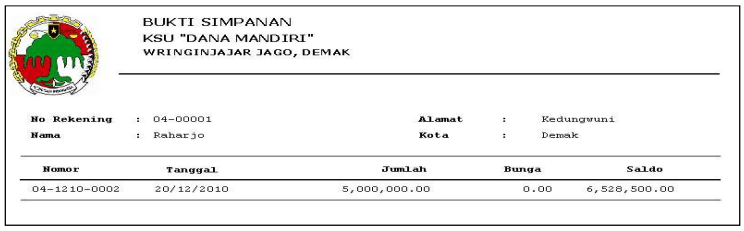
This form is used to enter installments of loans that have been made by the customer. The officer only needs to select the loan number and fill in the fine if any. All existing information will be filled in automatically according to the loan made. Installments that have been paid cannot be paid again in the same month.

The installment number is filled in automatically in the format Axxxxxxxx where x is a number. The first four numbers are the month of the system followed by the remainder with the installment serial number. For example, A10100001 means the installment number made in the 10th month of 2010 with serial number 0001.

The function of each existing button is:

a. The add button is used to enter new loan data
b. The search button is used to search for data that will be edited or deleted based on the loan number.
c. The edit button is used to change data.
d. The delete button is used to delete data.
e. The save button is used to save new data entered or data changed through editing.
f. The exit button is used to close the form.

10. Display Proof of Savings



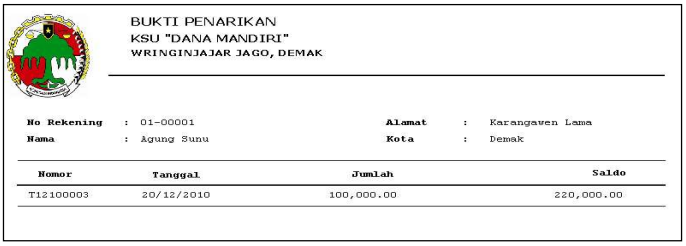
BUKTI SIMPANAN
KSU "DANA MANDIRI"
WRINGINJAJAR JAGO, DEMAK

No Rekening : 04-00001 Alamat : Kedungwuni
Nama : Raharjo Kota : Demak

Nomor	Tanggal	Jumlah	Bunga	Saldo
04-1210-0002	20/12/2010	5,000,000.00	0.00	6,528,500.00

Image of proof of savings display

10. Display Proof of Withdrawal



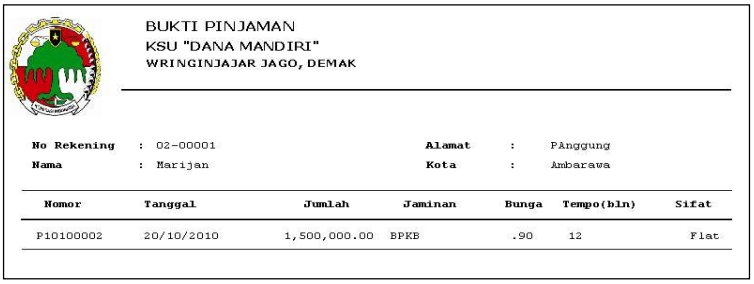
BUKTI PENARIKAN
KSU "DANA MANDIRI"
WRINGINJAJAR JAGO, DEMAK

No Rekening : 01-00001 Alamat : Karangaven Lama
Nama : Agung Sunu Kota : Demak

Nomor	Tanggal	Jumlah	Saldo
T12100003	20/12/2010	100,000.00	220,000.00

Image of proof of savings display

12. Loan proof display



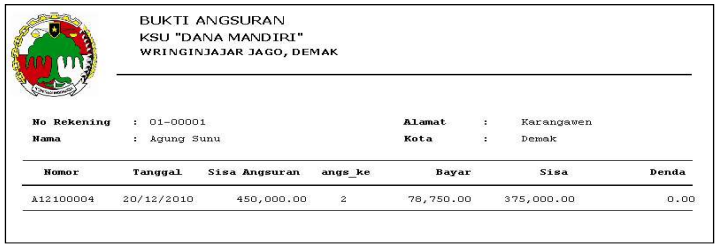
BUKTI PINJAMAN
KSU "DANA MANDIRI"
WRINGINJAJAR JAGO, DEMAK

No Rekening : 02-00001 Alamat : PAnggung
Nama : Marijan Kota : Ambarawa

Nomor	Tanggal	Jumlah	Jaminan	Bunga	Tempo(bln)	Sifat
P10100002	20/10/2010	1,500,000.00	BPKB	.90	12	Flat

Image of proof of loan display

13. Installment Proof Display



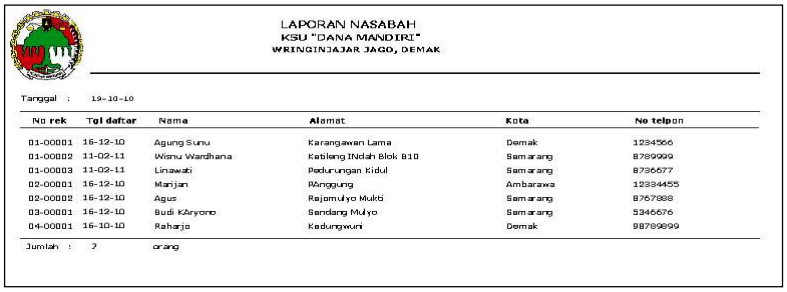
BUKTI ANGSURAN
KSU "DANA MANDIRI"
WRINGINJAJAR JAGO, DEMAK

No Rekening : 01-00001 Alamat : Karangawen
Nama : Agung Sunu Kota : Demak

Nomor	Tanggal	Sisa Angsuran	angs_ke	Bayar	Sisa	Denda
A12100004	20/12/2010	450,000.00	2	78,750.00	375,000.00	0.00

Image of installment proof display

14. Customer Data Report



LAPORAN NASABAH
KSU "DANA MANDIRI"
WRINGINJAJAR JAGO, DEMAK

Tanggal : 19-10-10

No rek	Tgl daftar	Nama	Alamat	Kota	No telpon
01-00001	16-12-10	Agung Sunu	Karangawan Lama	Demak	1234566
01-00002	11-02-11	Wisnu Wardhana	Kebleng INdah Blok B10	Semarang	8789999
01-00003	11-02-11	Linawati	Pedurungan Kidul	Semarang	8736677
02-00001	16-12-10	Marijan	RAnggung	Ambarawa	12334455
02-00002	16-12-10	Agus	Rejamulyo Mukti	Semarang	8767888
03-00001	16-12-10	Budi KAryono	Sendang Mulyo	Semarang	5346676
04-00001	16-10-10	Raharjo	Kedungwuni	Demak	98789899

Jumlah : 7 orang

Image Display of customer data

15. Deposit Report

Image Display of savings report options

LAPORAN SIMPANAN
KSU "DANA MANDIRI"
WRINGINJAJAR JAGO, DEMAK

Tanggal 19-10-10

No pinjam	No rek	Nama	Tanggal	Jumlah	Bunga	Saldo
01-1010-0001	01-00001	Agung Sunu	16-10-10	500,000.00	0.00	500,000.00
02-1010-0001	02-00001	Marijan	16-10-10	500,000.00	0.00	500,000.00
02-1010-0002	02-00001	Marijan	16-10-10	30,000.00	0.00	530,000.00
01-1010-0002	01-00002	Wisnu Wardhana	16-10-10	500,000.00	0.00	500,000.00
02-1010-0003	02-00001	Marijan	16-10-10	1,000,000.00	0.00	1,500,000.00

Jumlah : 5

Image Display of saving data

16. Withdrawal Report

Image Display of withdrawal report options

Image Display of withdrawal report

17. Loan Report

Image Display of loan report options

Image of loan report display

18. Installment Report

Image Display of installment report options

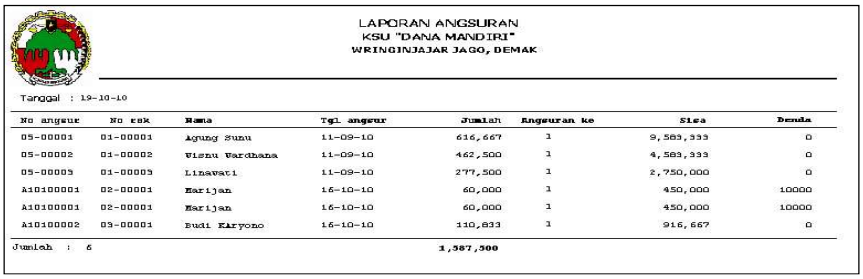


Image of installment report display

5. CONCLUSION

Conclusion

The KSU Cooperative "DANA MANDIRI" is an economic organization with a social character that operates in the field of savings and loan services which aims to improve the welfare of its members. To further improve the quality of service to members, especially regarding payments and savings and loans, it is necessary to make changes to the system which has been running so far to become a multiuser based information system.

From the results of the analysis and design of the savings and loan information system, the author can draw the following conclusions:

1. In the current savings and loan information system, weaknesses are still found, including:
   (a) There are still errors in calculating the amount of customer installments due to data recording which is still done conventionally, namely recording through books.
   (b) Searching for data for customers who will make installment payments is still less effective because they have to open the records one by one.
   (c) If the leader wants a report at any time, there are still difficulties because the data must be summarized first.

2. By developing the system into a multiuser-based information system, the problems encountered in the old system can be minimized.

Some of the benefits obtained by developing a multiuser-based system include:

1. With a multiuser-based savings and loan information system, errors in savings and loan calculations for customers can be minimized
2. Accelerating the availability of complete and accurate information so that it can help the data search process more quickly because the data has been integrated in a database.
3. Makes it easier to create reports that can be printed directly without opening and recapping them from the savings and loans notebook. If customers want a report, they can directly obtain the information at any time.

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