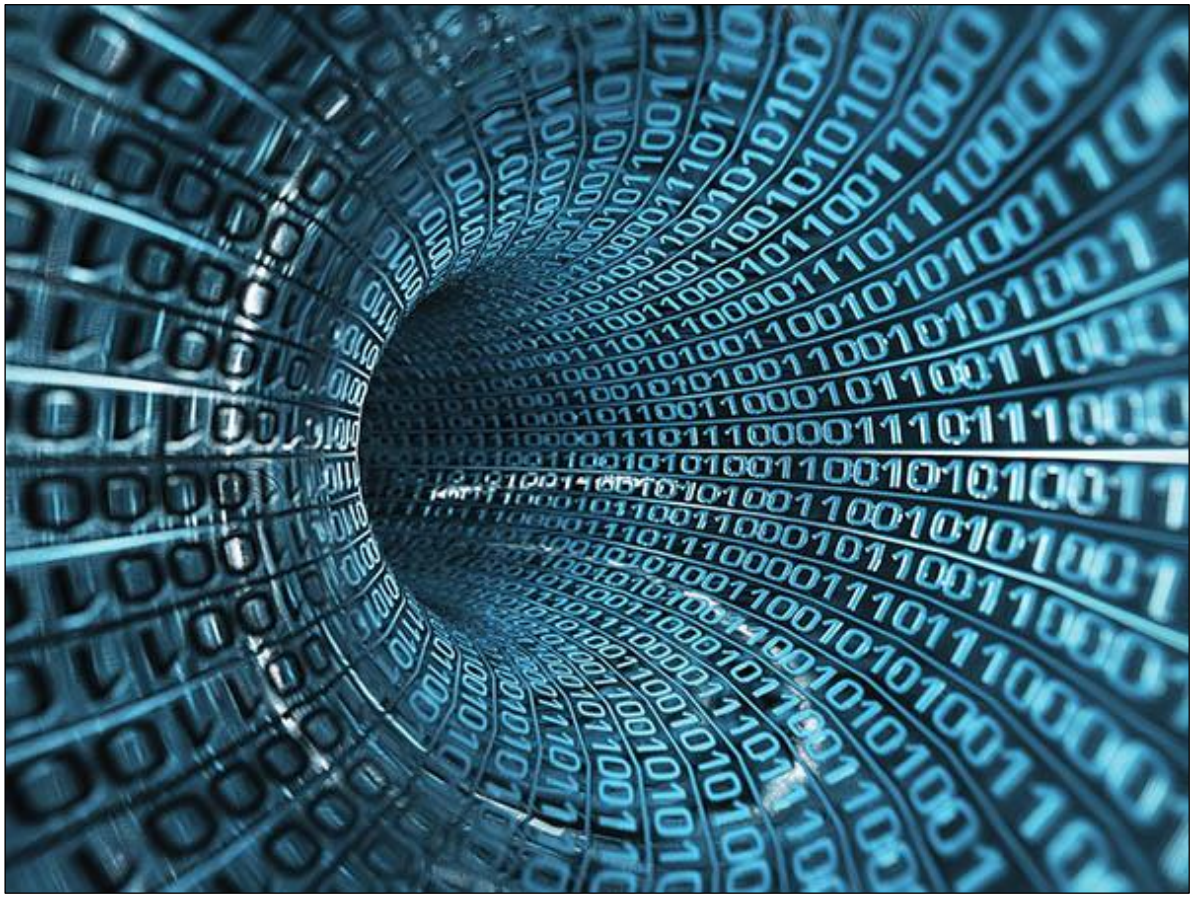
MWANZO BARAKA
MANAGEMENT INFORMATION SYSTEM



DECLARATION

I declare this computerized system as an original project created by me, the system analyst, for the benefit of Mwanzo Baraka Organization.

System Developer

Benson Gathitu.

DEDICATION

I dedicate this project to:

- My School, Starehe Boys' Centre
- My guardians; Mr. and Mrs. Kariuki and my sister Lucy Muthoni.
- My teachers at Starehe Boys' Centre and School

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ACKNOWLEDGEMENT

I am very grateful for all the support and guidance through my project.

I would first like to acknowledge my school, Starehe Boys' Centre and School for providing me with the required resources and knowledge to accomplish and complete this project. My teacher, Mr.Ndede has guided me on what to do and due to his faith in me, I am able to do this project. My regards also go to my friends for their support that helped me in the perfection of my project. Finally, I would like to thank my parents who have corrected and supported me during the development of my project.

INTRODUCTION

Mwanzo Baraka organization is a self-help group that is intended to improve the economic status of its members via pooling of financial resources. This benefits the members because they are privileged to get cheap loans from the organization.

The organization sustains itself through: Registration fees of its members, Monthly contributions, Interest gained through loans given to members and Penalties of delayed payments.

The organization is an open group and therefore anyone is free to join it provided he adheres to the rules.

Since the group was established they have been conducting their operations manually. It has been undergoing difficulties in recording, updating and accessing of records. Also, carrying out the calculations required manually has been very cumbersome. Due to this, the management of the group has called for the computerization of their operations and that is exactly what they entrusted me to do.

CHAPTER ONE: SYSTEM INVESTIGATION AND ANALYSIS

Problem definition

Problem definition is a stage whereby an outline of the problems facing the current manual system is outlined. Some of the problems facing the manual system are:

- They use 2 register books to record names of members (both Individual and Group Members) and groups together with their registration fees.
- They use 2 record books to record and maintain the monthly contributions of the members whether registered as an Individual or in a Group.
- They use cashbooks to record the loans offered, the normal loan payments and the payments for penalized defaulted amounts.
- They calculate interests gained by the organization, penalties, income for the organization and dividends manually.
- They give out receipt statements manually.

Overview of exiting system

Advantages of the existing system

- The data is original.
- Creates job opportunities especially in the accounting sector.
- The system is easy to understand.
- Use of register books, record books and cashbooks is much cheaper compared to buying and maintenance of computers and the information management software.
- Freedom from machines for one can carry out the calculations at any place other than at the office.

Disadvantages of the existing system

- There is data redundancy.
- Accessing of records is tedious and time wasting.
- There is difficulty in tracking incomplete payments, monthly contributions and payments for penalized amounts.
- Errors in allocating of Member numbers, Individual numbers, Group IDs and Loan IDs.
- Wrong data entry.
- Producing financial statements is exhausting and time wasting.

- Insecurity of the files because they are being stored in shelves and lockers whose keys can easily get lost or can be stolen by unauthorized people who want to have access to the data in the files.
- Calculating dividends and shares is tedious and there are many errors in the calculations.

Proposed system

Objectives of the proposed system

The proposed system will be fully computerized and will require the use of a computer in carrying all of its operations.

The objectives of this proposed system include:

- To reduce the cost of frequently buying register books, record books and cashbooks.
- Efficient and fast data processing.
- Provision of accurate and more informative statements and receipts.
- Safety of the organization's files and data.

Scope of the proposed system

The proposed system will be able to do the following:

- It will maintain all members' and groups' records.
- It will be able to calculate interests, payments, penalties and dividends automatically at an instant when the records are updated.
- It will be able to produce accurate reports and receipt statements.

Advantages of the proposed system

- Enhanced speed of carrying out calculations.
- The files are secure due to use of passwords to have access to their data.
- Automation of tasks.
- It is cheaper to run.
- Tracking of members' contributions, loans and payments is easier.

Disadvantages of the proposed system

- Implementation and maintenance of the proposed system is expensive.
- There must be a constant and reliable source of power.
- User training is a requirement before using the proposed system.
- Resistance from staff who are likely to be lose their jobs or become displaced when the system is implemented.
- There will be a high dependency on the computers for carrying out the organization's activities.

Feasibility Study

It is a study that is conducted when developing a system to determine if the project should be carried out or not. Therefore, the following are the feasibility studies that were carried out on both the existing and proposed system.

Technical Feasibility

The hardware, software and the technology required to develop, install, maintain and run the system is locally and readily available.

Legal Feasibility

The proposed system will not violate any law. It is original and approved by the organization's administrators.

Schedule Feasibility

The development and implementation of the proposed system shall be done in 4 phases so as to get used to it and so that all the records can be captured by the new system. The system will be complete in 4 months.

Time allocated for the implementation is as follows:

- System Investigation and Analysis……..3 weeks
- System Design…….1 month 1 week
- System Construction……....1 month
- System Testing and Demonstration…….1 month

Economic Feasibility

This is carried out so as to determine if the cost of introducing the new system is affordable. The organization then uses this to find out if it is able to realize large profits using the new system as compared to the old system.

Requirements	**Cost**
3 Computers @Kshs. 45,000 512 MB RAM,80GB,HDD,OS,Monitor, Keyboard, Mouse	Kshs. 135,000
2 Inkjet Printers	Kshs. 20,000
Staff Training	Kshs. 20,000
Software Antivirus, Mwanzo Baraka Software	Kshs. 50,000
Electricity per month	Kshs. 5,000
Totals	**Kshs. 230, 000**

Table 1: Economic Feasibility

Social Feasibility

It is concerned with the effects on the employees and customers at the introduction of the new system .The system was approved and well welcomed by the employees.

Assumptions

There will be no delays in collecting and analyzing of data.

Justification of the new system

After the feasibility study and comparing the advantages and disadvantages of the existing and proposed system, it is evident that this proposed system will be a success because its advantages are more.

Fact finding

Information about the operations of the system was collected through:

- Observation
- Interviews
- Document Analysis

Observation

First-hand information of how members are registered, how the monthly contributions are recorded, how loans and payments are issued out and how the organization's income and dividends are calculated was collected by me.

Interviews

I carried out interviews with the staff working for the organization, the management and also the members registered in the organization. This helped me know the weaknesses and the strengths of the existing system.

Document Analysis

Study of the documents used in the system; record books, register books, cashbooks were carried out. The calculations and how records were entered were noted down.

CHAPTER TWO: SYSTEM DESIGN

This is a stage in system development where the actual creating of the database structure is done. Several tools e.g. table designs, block diagrams and system flowcharts are used to assist in achieving the framework of the system.

Table Design

Appropriate Variables and Data Types

The tables that are to be used in creating the database are as follows:

Members Table

Field Name	Data Type
National ID No	Text
Member No	Text
First Name	Text
Last Name	Text
Gender	Text
Mobile No	Text
Email Address	Text
Place of Residence	Text
Date of Birth	Date/Time
Registration Type	Text

Table 2: Members Table

Individual Details Table

Field Name	Data Type
Individual No	AutoNumber
Member No	Text
Registration Type	Currency
Date of Registration	Date/Time

Table 3: Individual Details Table

Groups Table

Field Name	Data Type
Group ID	Text
Group Name	Text
Registration Fee	Currency
Name of Group Official	Text
Group Official Telephone No	Text
Date Of Registration	Date/Time

Table 4: Groups Table

Group Members Table

Field Name	Data Type
Member No	Text
Group Name	Text
Group ID	Text

Table 5: Members Table

Individual Monthly Contributions Table

Field Name	Data Type
Member No	Text
Individual No	Text
Individual Contribution	Currency
Date of Contribution	Date/Time

Table 6: Individual Monthly Contributions Table

Group Members Monthly Contributions Table

Field Name	Data Type
Member No	Text
Group ID	Text
Total Money Contributed	Currency
Group Share Contribution	Currency
Group Member Contribution	Calculated
Date Of Contribution	Date/Time

Table 7: Group Members Monthly Contributions Table

Individual Member Loan Table

Field Name	Data Type
Loan ID	AutoNumber
Member No	Text
Individual No	Text
Amount Loaned	Currency
Due Payment Date	Date/Time
Date Borrowed	Date/Time
Loan Issued Out	Text

Table 8: Individual Member Loan Table

Group Member Loan Table

Field Name	Data Type
Loan ID	Text
Member No	Text
Group ID	Text
Amount Loaned	Currency
Date Borrowed	Date/Time
Loan Issued Out	Text
Due Payment Date	Date/Time

Table 9: Group Member Loan Table

Group Loan Table

Field Name	Data Type
Loan ID	AutoNumber
Group ID	Text
Amount Loaned	Currency
Date Borrowed	Date/Time
Loan Issued Out	Text
Due Payment Date	Date/Time

Table 10: Group Loan Table

Individual Payments Table

Field Name	Data Type
Payment No	AutoNumber
Loan ID	Text
Member No	Text
Month Of Payment	Date/Time
Money Paid	Currency
Date of Payment	Date/Time

Table 11: Individual Payments Table

Group Member Payments Table

Field Name	Data Type
Payment No	AutoNumber
Loan ID	Text
Member No	Text
Month Of Payment	Date/Time
Money Paid	Currency
Date of Payment	Date/Time

Table 12: Group Member Payments Table

Group Payments Table

Field Name	Data Type
Payment No	AutoNumber
Loan ID	Text
Group ID	Text
Month Of Payment	Date/Time
Money Paid	Currency
Date of payment	Date/Time

Table 13: Group Payments Table

Individual Member Defaulted Payments Table

Field Name	Data Type
Payment No	AutoNumber
Loan ID	Text
Member No	Text
Money Paid	Currency
Date of Payment	Date/Time
Month Of Payment	Date/Time

Table 14: Individual Member Defaulted Payments Table

Group Member Defaulted Payments Table

Field Name	Data Type
Payment No	AutoNumber
Loan ID	Text
Member No	Text
Money Paid	Currency
Date of Payment	Date/Time
Month Of Payment	Date/Time

Table 15: Group Member Defaulted Payments Table

Group Defaulted Payments Table

Field Name	Data Type
Payment No	AutoNumber
Loan ID	Text
Group ID	Text
Money Paid	Currency
Date Of Payment	Date/Time
Month Of Payment	Date/Time

Table 16: Group Defaulted Payments Table

Users Table

Field Name	Data Type
User ID	AutoNumber
Name	Text
Organization Level	Text
Password	Text

Table 17: Users Table

Grouping of Variables into Tables

Members Table

National ID	Member No	First Name	Last Name	Gender	Mobile No	Email Address	Place of Residence	Date of Birth	Registration Type
10658794	MB_001	JAMES	MAINA	Male	(+254)722654982	jamesmaina@gmail.com	Ruaraka	24-08-92	Individual Only
20546887	MB _002	CHARLES	ODHIAMBO	Male	(+254)722984922	charlesodhiambo@gmail.com	Kiambu	06-09-90	Both Individual and Group
94458945	MB_003	MERCY	WAMAI	Female	(+254)795982989	mercywamai@gmail.com	Komarock	06-12-92	None

Table 18: Members Table

Groups Table

Group ID	Date of Registration	Group Name	Group Official	Group Official Tel. No	Registration Fee
GP_001	12-01-17	SIMBA	BEN KINYANJUI	(+254)751818915	Kshs. 5000
GP_002	28-01-07	USHINDI	JANE WANJIKU	(+254)792829599	Kshs. 5000
GP_003	06-02-17	AMANI	SARAH MUENI	(+254)748864886	Kshs. 5000

Table 19: Groups Table

Individual Details Table

Individual No	Member No	Registration Fee	Date of Registration
IND_001	MB_001	Kshs. 2000	10-01-17
IND_002	MB_005	Kshs. 2000	13-01-17
IND_003	MB_002	Kshs. 2000	28-02-17

Table 20: Individual Details Table

Individual Monthly Contributions Table

Member No	Contribution	Date of Contribution
MB_001	Kshs.1220	12-01-17
MB_001	Kshs.1220	09-02-17
MB_001	Kshs.1000	16-03-17

Table 21: **Individual Monthly Contributions Table**

Individual Member Loans Table

Loan ID	Member No	Individual No	Amount Loaned	Date Borrowed	Due Payment Date	Loan Issued out
IMLN_001	MB_002	IND_003	Kshs. 50,000	05-02-17	August 2018	Yes
IMLN_002	MB_014	IND_007	Kshs. 20,000	19-12-18	December 2018	Yes

Table 22: Individual Member Loans Table

Users Table

User ID	Name	Organization Level	Password
USER_001	Ivy Muthoni	Administrator	*****
USER_002	Samuel Moustapha	Administrator	*****
USER_003	Gladys Mwende	User	*****

Table 23: Users Table

Input Screens

a) Log In Form

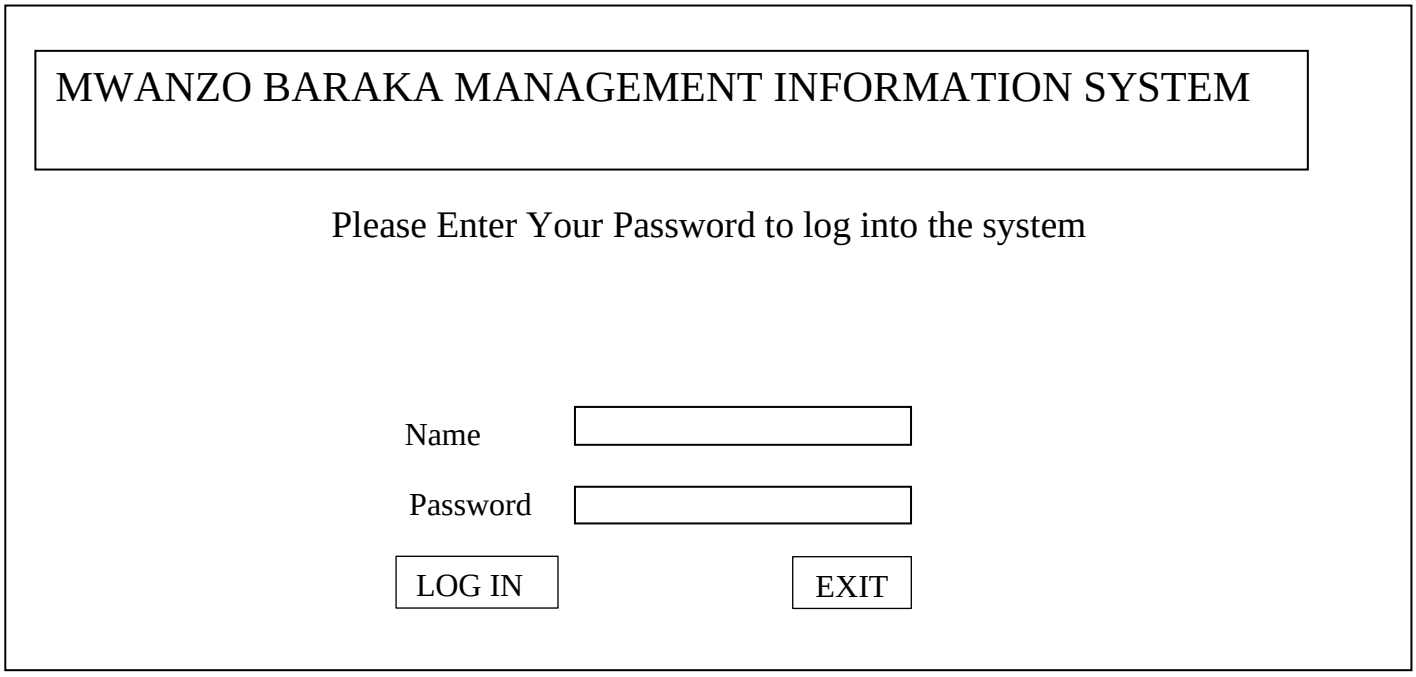


Figure 1: Log In Form

b) Members Form

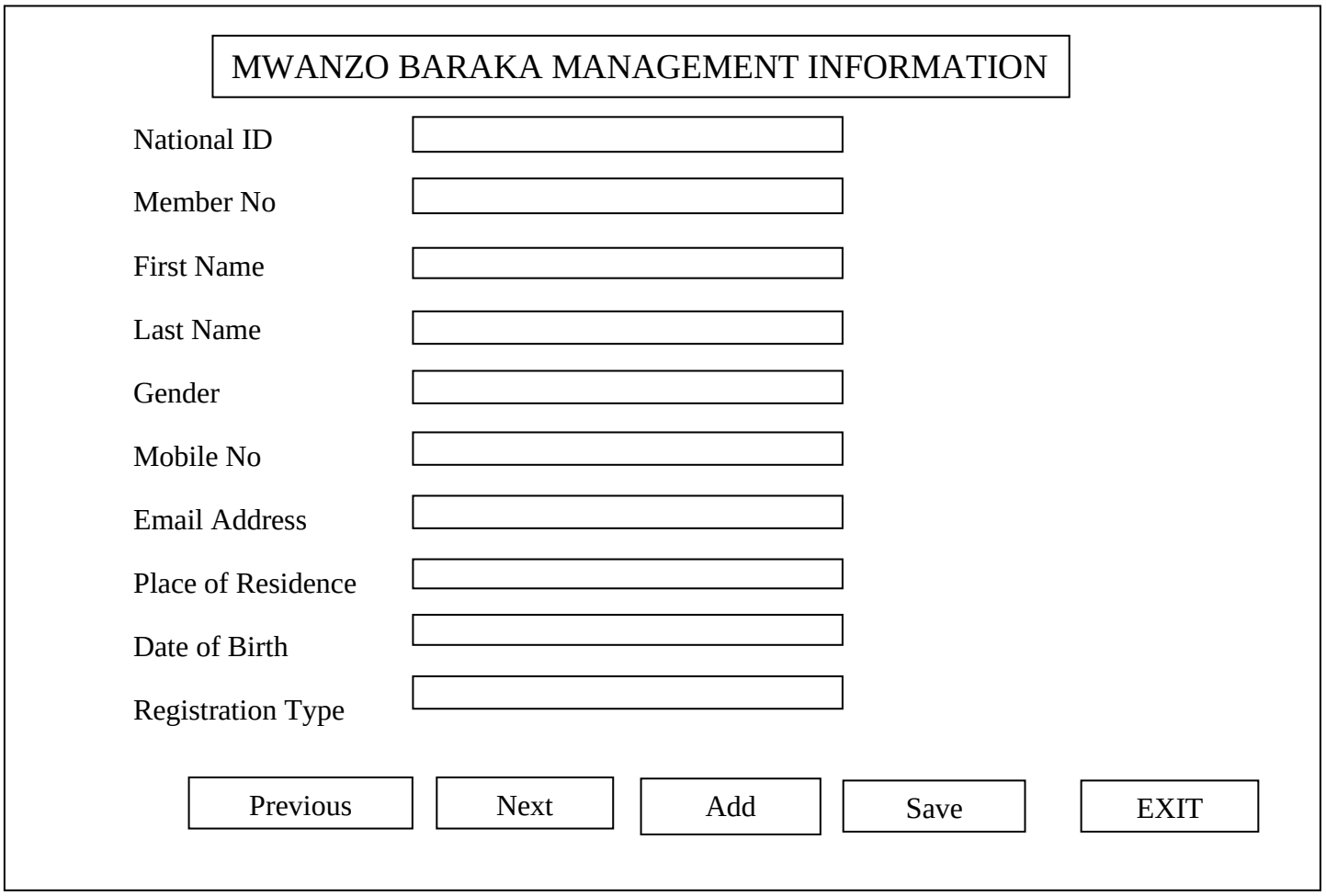


Figure 2: Members Form

c) Individual Members Registration Form

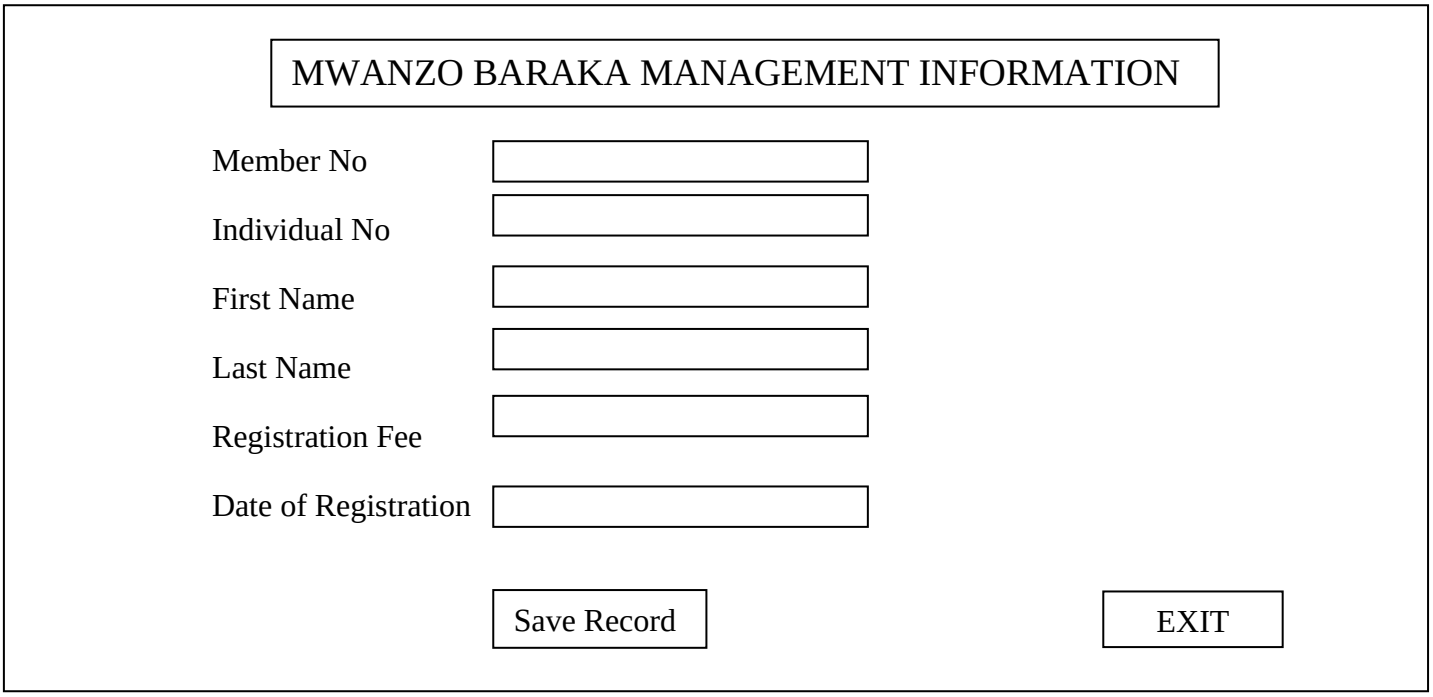


Figure 3: Individual Members Registration Form

d) Group Members Registration Form

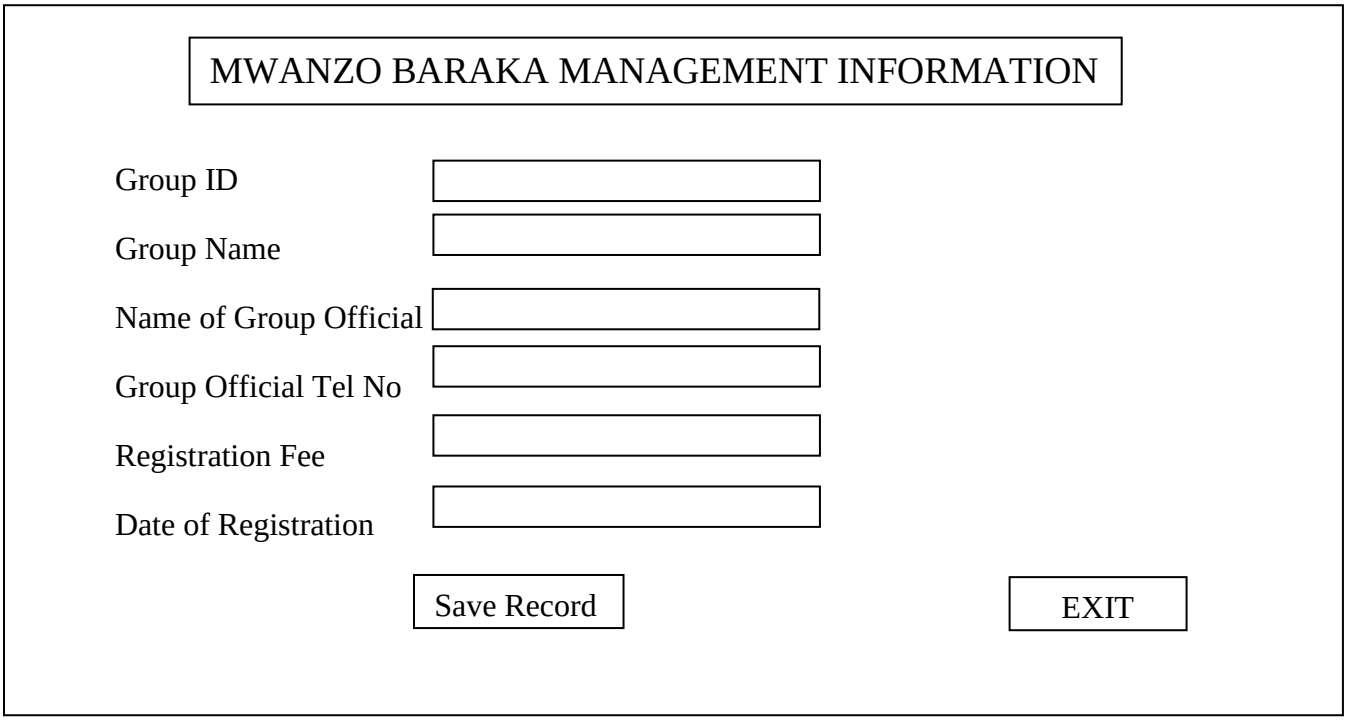


Figure 4: Group Members Registration Form

e) Individual Members Contributions Form

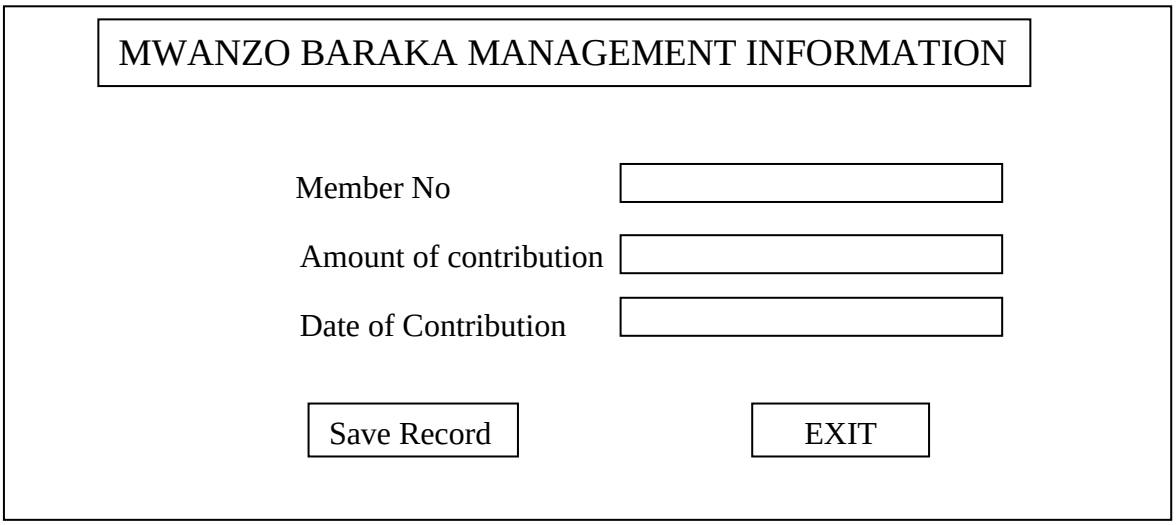


Figure 5: Individual Members Contributions Form

Output Screens

a) Members Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM									
MEMBERS									
National ID	**Member No**	**First Name**	**Last Name**	**Gender**	**Mobile No**	**Email Address**	**Place of Residence**	**Date of Birth**	**Registration Type**
10658794	MB_001	JAMES	MAINA	Male	(+254)722654982	jamesmaina@gmail.com	Ruaraka	24-08-92	Individual Only
20546887	MB _002	CHARLES	ODHIAMBO	Male	(+254)722984922	charlesodhiambo@gmail.com	Kiambu	06-09-90	Both Individual and Group
94458945	MB_003	MERCY	WAMAI	Female	(+254)795982989	mercywamai@gmail.com	Komarock	06-12-92	None
26494518	MB_004	SARAH	MUENI	Female	(+254)748864886	sarahmueni@gmail.com	Kayole	8/5/1992	Group Only
15659491	MB_005	LUCY	MUTHONI	Female	(+254)738411289	lucymuthoni1@gmail.com	Embakasi	2/9/1995	Individual Only

Table 24: Members Report

b) Individual Members' Loans Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM								
INDIVIDUAL MEMBERS LOANS								
Loan ID	**Member No**	**First Name**	**Last Name**	**Amount Loaned**	**Date Borrowed**	**Due Payment Month**	**Repayment Period(Months)**	**Was Loan Issued Out?**
IMLN_001	MB_002	CHARLES	ODHIAMBO	Kshs. 50,000	2/5/2017	July 2018	17	Yes
IMLN_002	MB_014	ELSIE	ATOTI	Kshs. 25,000	4/6/2017	December 2018	20	Yes
				Totals: 75,000				

Table 25: Individual Members' Loans Report

c) Individual Members' Monthly Contributions Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM	
INDIVIDUAL MEMBERS MONTHLY CONTRIBUTIONS	
Member No: MB_002	
Individual Contribution	**Date of Contribution**
Kshs. 1000	1/12/2017
Kshs. 1000	2/15/2017
Kshs. 2000	3/16/2017
Kshs. 1500	4/20/2017
Kshs. 2000	5/10/2017
Kshs. 1200	6/15/2017
Kshs. 1050	7/20/2017
Totals : Kshs.9750	

Table 26: Individual Members' Monthly Contributions Report

d) Individual Members' Payments Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM				
INDIVIDUAL MEMBER PAYMENTS				
Member No :MB_014				
Loan ID	Month Member Paid for	Money Paid	Total Money Paid	Date of Payment
IMLN_001	February 2017	Kshs. 500	Kshs. 500	2/15/2017
IMLN_001	February 2017	Kshs. 600	Kshs. 1100	2/23/2017
IMLN_001	March 2017	Kshs. 900	Kshs. 2000	2/28/2017
IMLN_001	March 2017	Kshs. 1000	Kshs. 3000	2/28/2017
		Totals : Kshs. 3000		

Table 27: Individual Members' Payments Report

Block Diagram

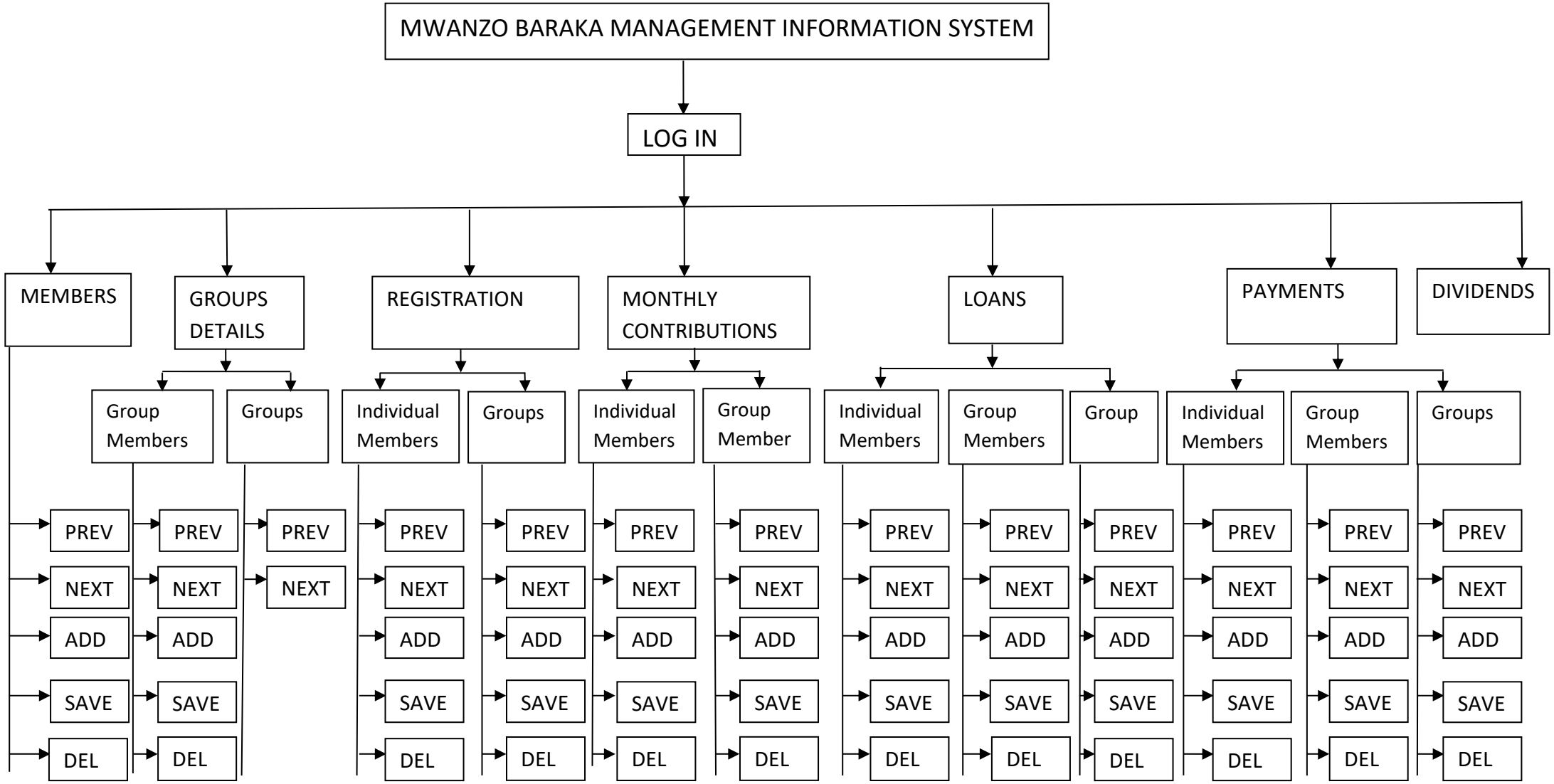


Figure 6: Block Diagram

System Flowchart

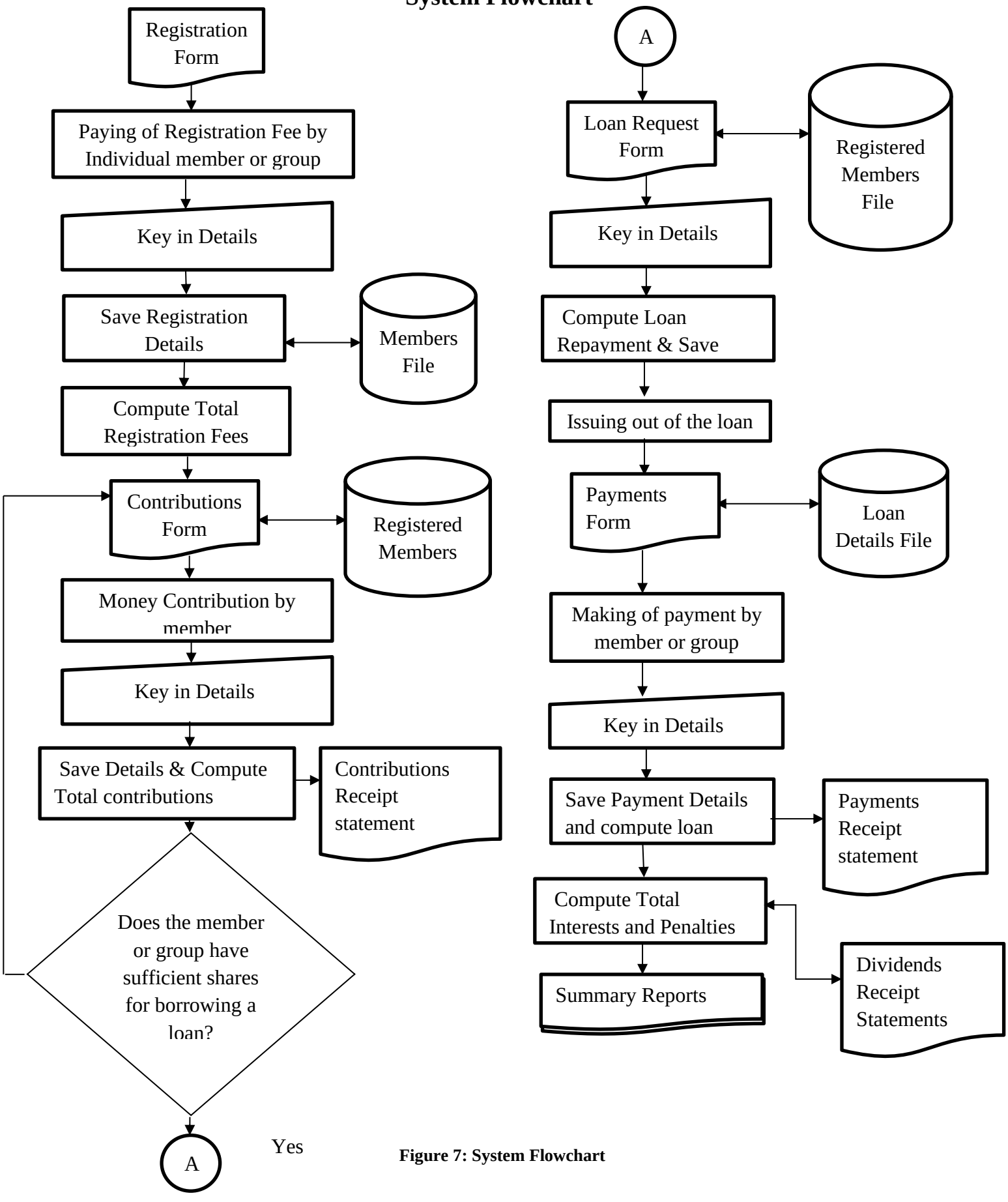


Figure 7: System Flowchart

CHAPTER THREE: SYSTEM CONSTRUCTION

Modular Flowcharts

LOG IN

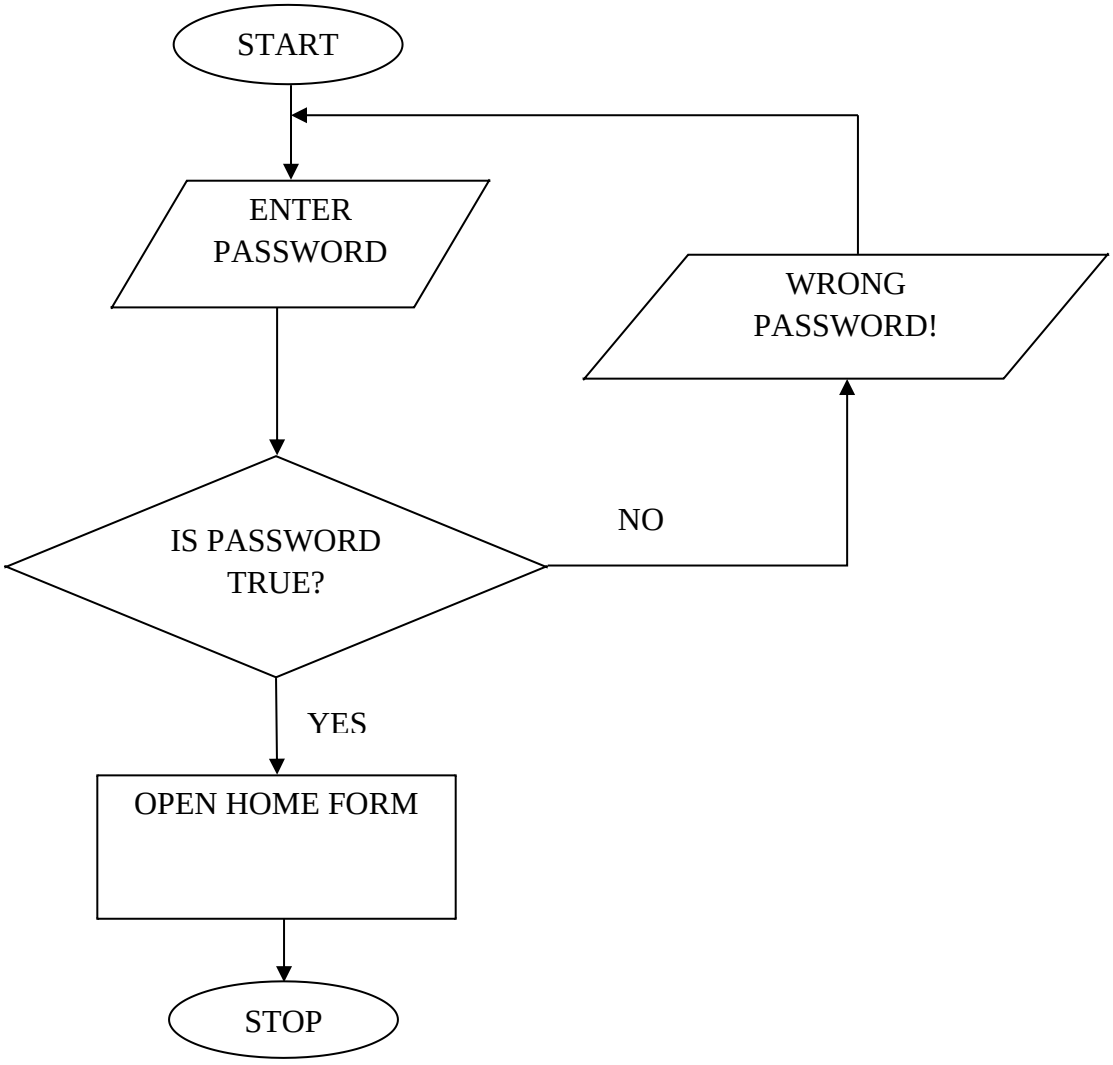


Figure 8: Log In Flowchart

PREVIOUS RECORD

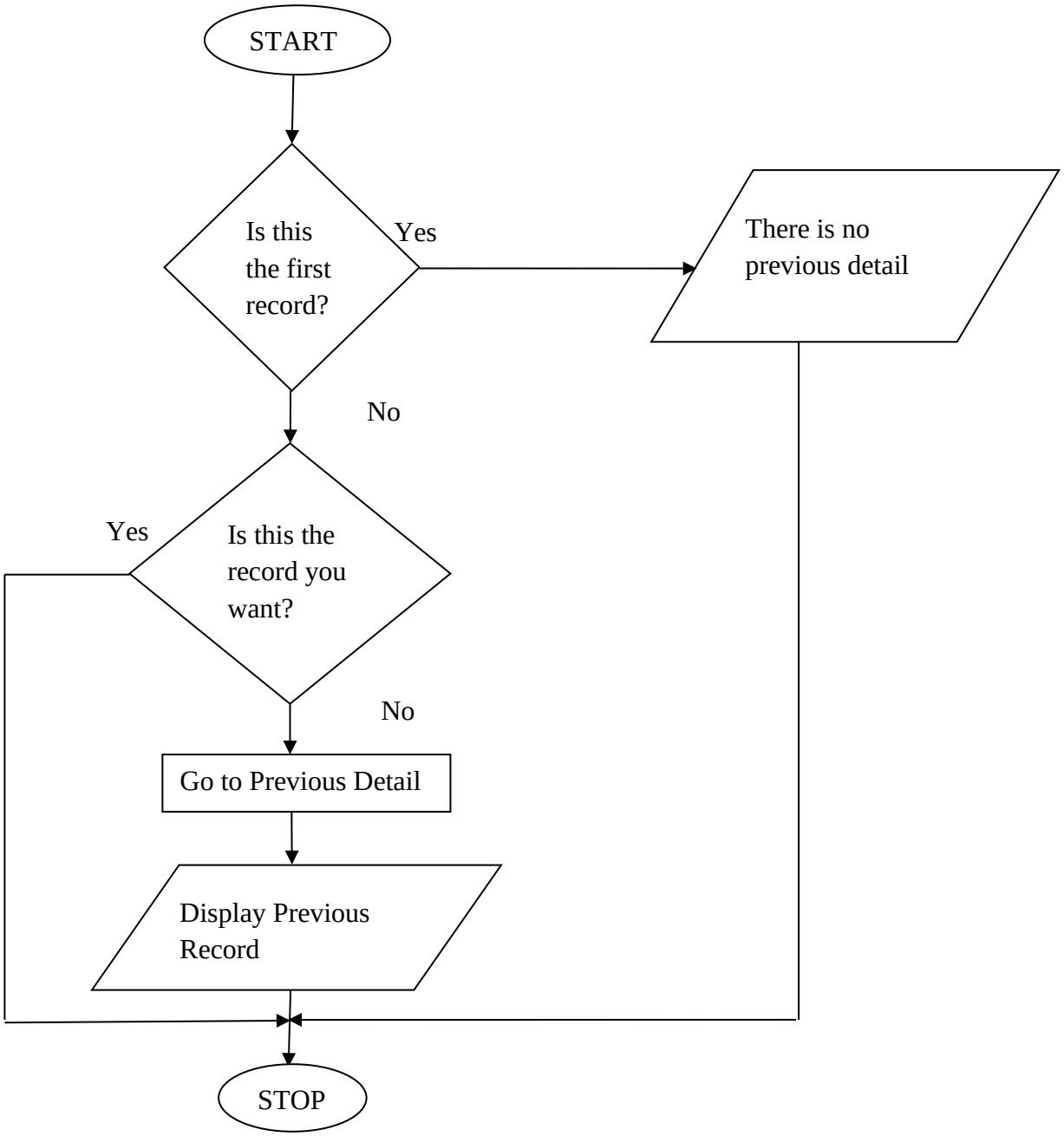


Figure 9: Previous Record Flowchart

NEXT RECORD

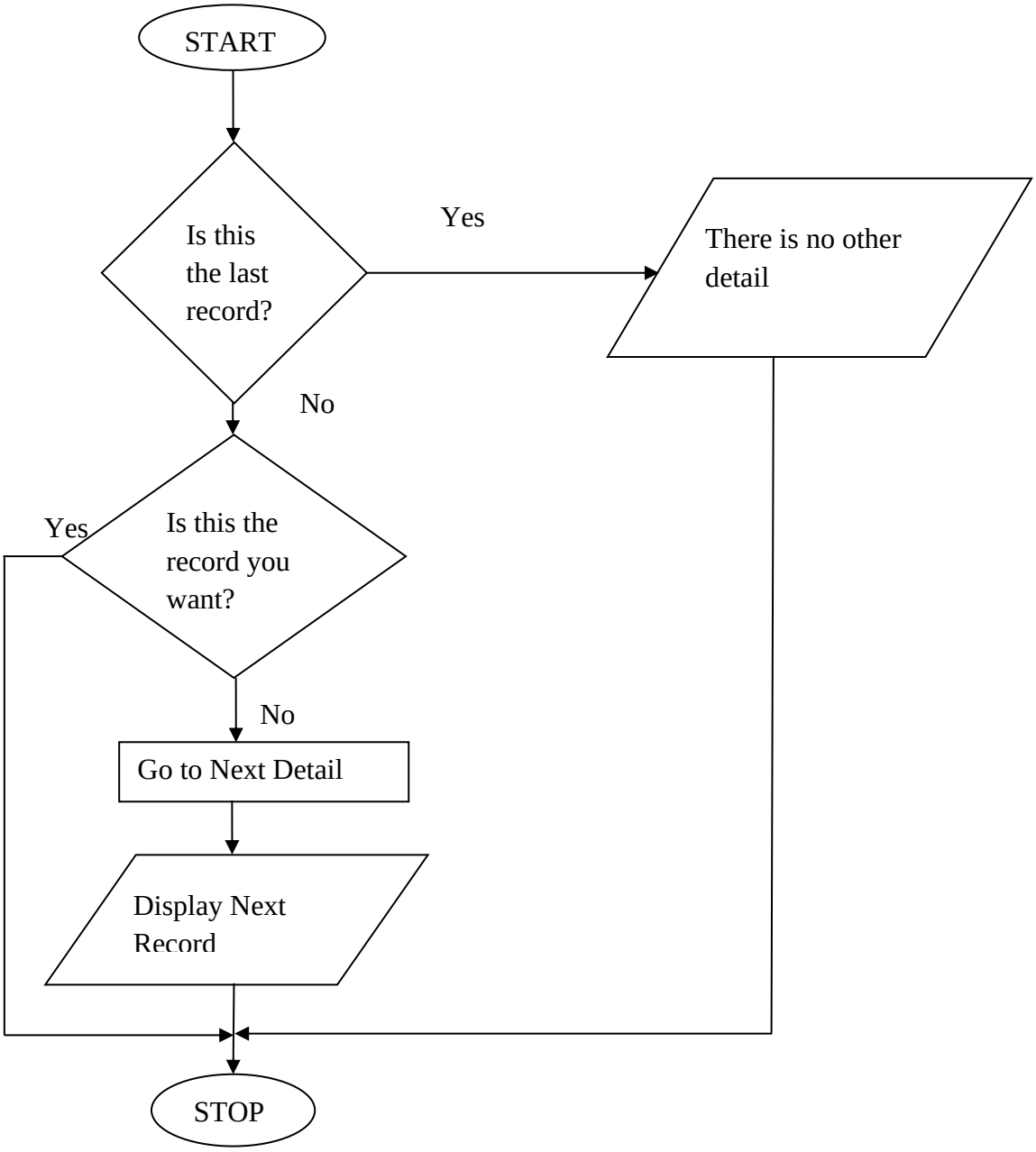


Figure 10: Next Record flowchart

ADD RECORD

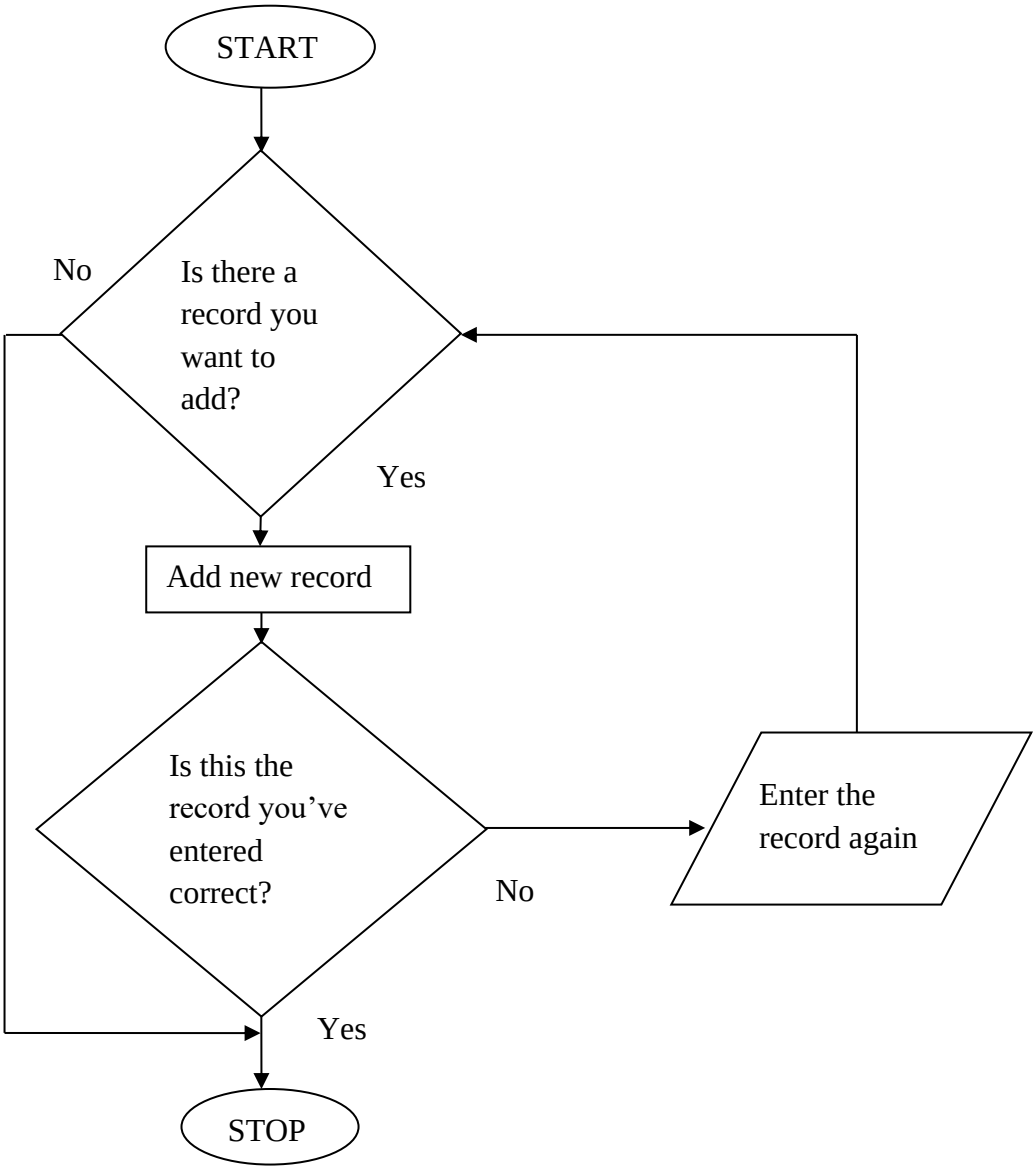


Figure 11: Add Record flowchart

SAVE RECORD

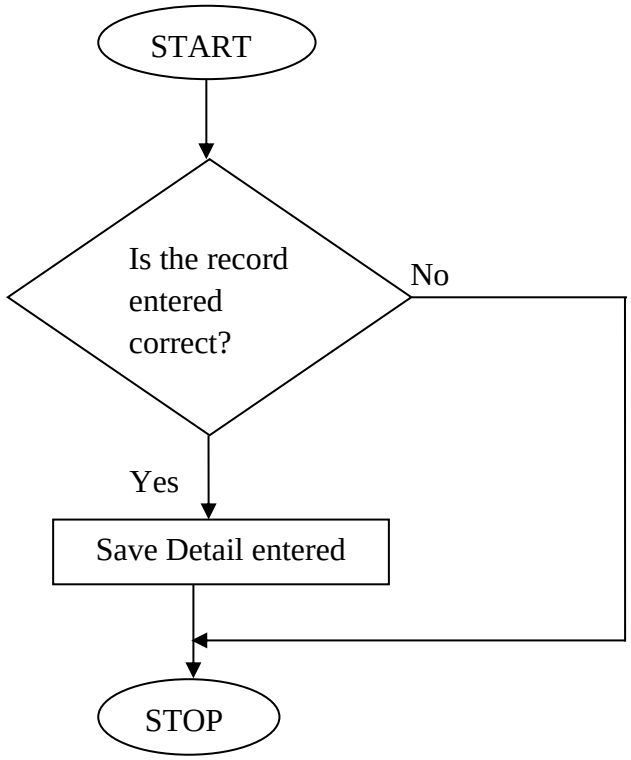


Figure 12: Save Record Flowchart

Relationships

The relationships of these tables are shown below:

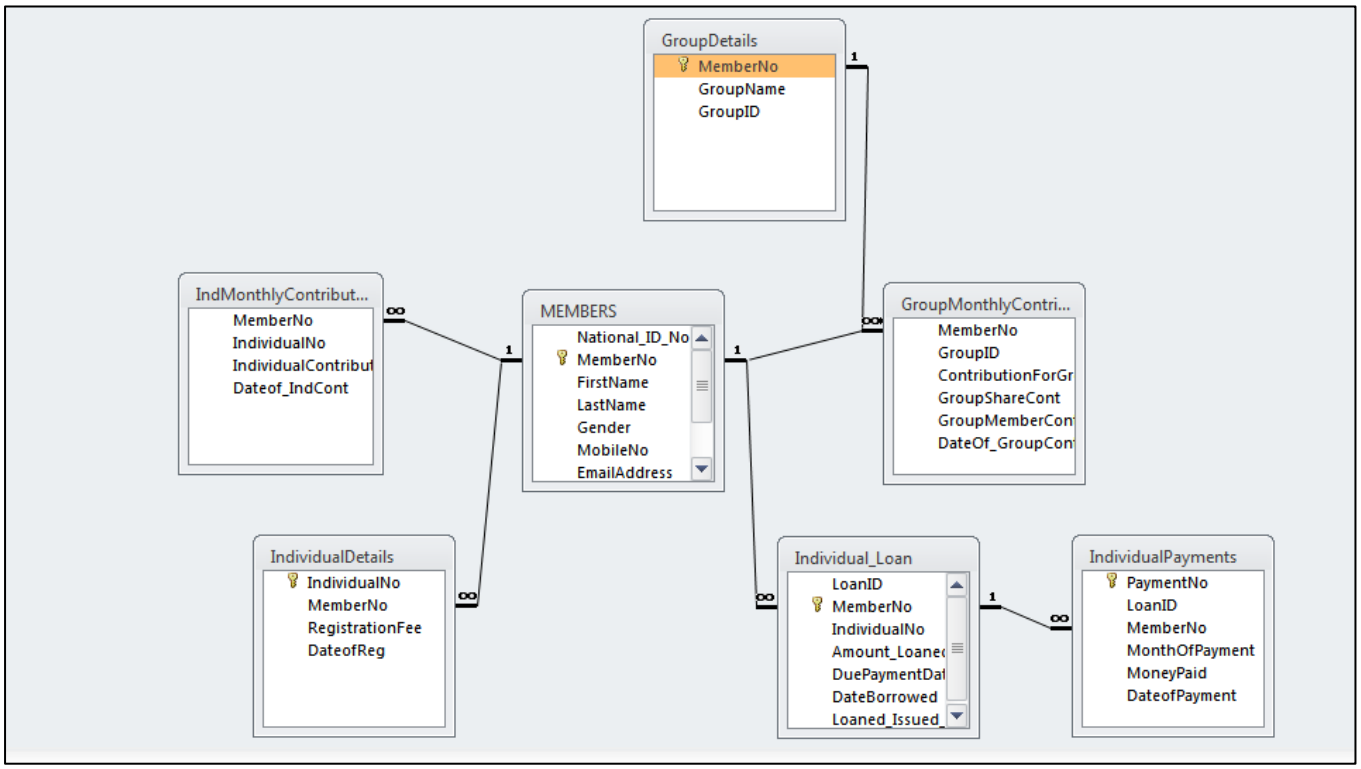


Figure 13: Relationships

Process specifications

These are the operations that system is required to perform.

- To enter and maintain all records of the member in the organization.
- To enter the registration fees of each member and group and compute the total fees paid.
- To enter new monthly contributions for the members and compute each member's total contributions.
- To enter and maintain records of loans borrowed.
- To compute the loan repayments and interest on the loans borrowed.
- To compute total income of the organization.
- To calculate the amount of dividend required to be given to each shareholder.

Output specifications

This is what is expected to be displayed by the user .The system should:

- Generate a list of all members in the organization.
- Generate a list of total monthly contributions made by each member.
- Display the amount of loan borrowed by a member or a group.
- Generate reports on the payments made for the loans borrowed or those payments made for the penalized defaulted amounts.
- Generate a report of the income of the organization.
- Display the dividends of each shareholder.

Tables

These are where all the data in the system is stored for reference and manipulation. They are the basic foundation of the information system.

The following are the tables that were used in the design of the system:

1) Members Table

MEMBERS

National_ID	MemberNo	FirstName	LastName	Gender	MobileNo	EmailAddress	PlaceofResidenc	DateofBirth	Registration
10658794	MB_001	JAMES	MAINA	Male	(+254)722654982	jamesmaina@gmail.com	Ruaraka	24-08-92	Individual only
20546887	MB_002	CHARLES	ODHIAMBO	Male	(+254)722984922	charlesodhiambo@gmail.	Kiambu	06-09-90	Both Individua
94458945	MB_003	MERCY	WAMAI	Female	(+254)795982989	mercywamai@gmail.com	Komarock	06-12-92	None
26494518	MB_004	SARAH	MUENI	Female	(+254)748864886	sarahmueni@gmail.com	Kayole	05-08-92	Group Only
15659491	MB_005	LUCY	MUTHONI	Female	(+254)738411289	lucymuthoni1@gmail.con	Embakasi	09-02-95	Individual only
86481166	MB_006	SAMMY	KINTALEL	Male	(+254)748918918	sammykintalel@gmail.co	Westlands	02-04-90	None
56484891	MB_007	FRANK	ODUOR	Male	(+254)795929818	frankoduor@gmail.com	Lavington	05-09-89	None
45646101	MB_008	STELLA	WATONGO	Female	(+254)759299595	stellawatongo@gmail.cor	Kibera	21-08-89	Group Only
15165164	MB_009	BEN	KINYANJUI	Male	(+254)751818915	benkinyanjui@gmail.com	Embakasi	23-06-89	Group Only
48499618	MB_010	GRACE	MWENDE	Female	(+254)742851885	gracemwende@gmail.cor	Umoja	04-09-90	Individual only
54984841	MB_011	REX	MATOLO	Male	(+254)708498898	rexmatolo@gmail.com	Dandora	01-02-89	None
65814951	MB_012	BABU	MAENDE	Male	(+254)700084916	babumaende@gmail.com	Muthaiga	05-08-89	Individual only
65498198	MB_013	FRANK	MOHAMMED	Male	(+254)704984498	frankmohammed@gmail.	Komarock	06-12-95	Group Only
56186419	MB_014	ELSIE	ATOTI	Female	(+254)704896459	elsieatoti@gmail.com	Tumutumu	09-08-95	Individual only
54188188	MB_015	ANITA	WANDIA	Female	(+254)785198188	anitawandia@gmail.com	Westlands	08-09-92	Group Only
32465188	MB_016	ZELIPHA	NYOKABI	Female	(+254)799881818	zeliphanyokabi@gmail.cc	Westlands	06-02-96	Group Only
87327478	MB_017	MARIA	ANYANGO	Female	(+254)700998882	mariaanyango@gmail.cor	Kiambu	05-08-94	Individual only
98415682	MB_018	BRIGHTON	MWENDWA	Male	(+254)700695998	brightonmwendwa@gma	Kibera	12-09-94	None
21566188	MB_019	JANE	WANJIKU	Female	(+254)928295999	janewanjiku@gmail.com	Umoja	26-09-96	Group Only
12481488	MB_020	MARY	WANGUI	Female	(+254)748848814	marywangui@gmail.com	KonaMbaya	24-08-93	Group Only

Figure 14: Members Table

2) Individual Details Table

IndividualDetails

IndividualNo	MemberNo	RegistrationFee	DateofReg
IND_001	MB_001	Kshs2,000.00	10-01-17
IND_002	MB_005	Kshs2,000.00	13-01-17
IND_003	MB_002	Kshs2,000.00	28-02-17
IND_004	MB_010	Kshs2,000.00	04-05-17
IND_005	MB_012	Kshs2,000.00	13-05-17
IND_006	MB_017	Kshs2,000.00	08-05-17
IND_007	MB_014	Kshs2,000.00	19-06-17

Figure 15: Individual Details Table

3) Groups Table

Groups

GroupID	GroupOfficial_TelNo	DateOfRegistration	GroupName	RegisterationFee	NameofGroupOfficial
GP_001	(+254)751818915	12-01-17	SIMBA	Kshs5,000.00	BEN KINYANJUI
GP_002	(+254)928295999	28-01-17	USHINDI	Kshs5,000.00	JANE WANJIKU
GP_003	(+254)748864886	06-02-17	AMANI	Kshs5,000.00	SARAH MUENI

Figure 16: Groups Table

4) Group Members Table

GroupDetails

MemberNo	GroupID
MB_002	GP_002
MB_004	GP_003
MB_008	GP_003
MB_009	GP_001
MB_013	GP_003
MB_015	GP_001
MB_016	GP_001
MB_019	GP_002
MB_020	GP_002

Figure 17: Group Members Table

5) Individual Members Monthly Contributions Table

IndMonthlyContributions

MemberNo	IndividualN	IndividualContribution	Dateof_IndCont
MB_001	IND_001	Kshs. 1,220	12-01-17
MB_001	IND_001	Kshs. 1,220	09-02-17
MB_001	IND_001	Kshs. 1,000	16-03-17
MB_001	IND_001	Kshs. 1,000	27-04-17
MB_001	IND_001	Kshs. 1,100	18-05-17
MB_001	IND_001	Kshs. 1,500	02-06-17
MB_001	IND_001	Kshs. 1,000	14-07-17
MB_001	IND_001	Kshs. 1,200	18-08-17
MB_001	IND_001	Kshs. 1,000	01-09-17
MB_002	IND_003	Kshs. 1,500	11-02-17
MB_002	IND_003	Kshs. 1,220	16-03-17
MB_002	IND_003	Kshs. 1,100	09-01-17
MB_002	IND_003	Kshs. 1,500	07-04-17
MB_002	IND_003	Kshs. 1,600	18-05-17
MB_002	IND_003	Kshs. 1,000	01-06-17

Figure 18: Individual Members Monthly Contributions Table

6) Group Members Monthly Contribution

GroupMonthlyContributions

MemberNo	GroupID	ContributionForGrc	GroupShareCont	GroupMemberCont	DateOf_GroupCont
MB_002	GP_002	Kshs. 1,200	Kshs. 200	Kshs1,000.00	02-04-17
MB_002	GP_002	Kshs. 1,200	Kshs. 200	Kshs1,000.00	18-02-17
MB_002	GP_002	Kshs. 1,200	Kshs. 200	Kshs1,000.00	10-03-17
MB_002	GP_002	Kshs. 1,200	Kshs. 200	Kshs1,000.00	08-01-17
MB_002	GP_002	Kshs. 1,200	Kshs. 200	Kshs1,000.00	18-05-17
MB_004	GP_003	Kshs. 1,350	Kshs. 200	Kshs1,150.00	10-01-17
MB_004	GP_003	Kshs. 1,200	Kshs. 200	Kshs1,000.00	10-02-17
MB_004	GP_003	Kshs. 1,500	Kshs. 200	Kshs1,300.00	22-03-17
MB_004	GP_003	Kshs. 2,000	Kshs. 200	Kshs1,800.00	01-04-17
MB_004	GP_003	Kshs. 1,500	Kshs. 200	Kshs1,300.00	28-05-17

Figure 19: Group Members Monthly Contributions Table

7) Individual Member Loans Table

Individual_Loan

LoanID	MemberNo	IndividualNo	Amount_Loaned	DuePaymentDate	DateBorrowed	Loaned_Issued_Out
IMLN_001	MB_002	IND_003	Kshs. 50,000	19-07-18	05-02-17	Yes
IMLN_002	MB_014	IND_007	Kshs. 25,000	19-12-18	06-04-17	Yes

Figure 20: Individual Member Loans Table

8) Group Member Loans Table

GroupMemberLoan

LoanID	MemberNo	Group_ID	Amount_Loaned	DateBorrowed	LoanIssuedOut	DuePaymentDate
GMLN_001	MB_008	GP_003	Kshs. 30,000	03-02-17	Yes	10-10-18
GMLN_002	MB_009	GP_001	Kshs. 40,000	04-02-17	Yes	13-09-18

Figure 21: Group Member Loans Table

9) Group Loan Table

GroupLoan

LoanID	GroupID	Amount_Loaned	DateBorrowed	DuePaymentDate	LoanIssuedOut
GPLN_001	GP_003	Kshs. 3,000	04-03-17	08-12-17	Yes

Figure 22: Group Loans Table

10) Individual Members Payments Table

IndividualPayments

PaymentNo	LoanID	MemberNo	MonthOfPayment	MoneyPaid	DateofPayment
1	LN_001	MB_002	February 2017	$500.00	15-02-17
2	LN_001	MB_002	February 2017	$600.00	23-02-17
4	LN_001	MB_002	February 2017	$900.00	28-02-17
7	LN_002	MB_014	March 2017	$1,000.00	16-03-17
11	LN_001	MB_002	March 2017	$200.00	16-03-17
12	LN_001	MB_002	March 2017	$1,200.00	21-03-17
13	LN_001	MB_002	March 2017	$1,000.00	24-03-17
14	LN_001	MB_002	March 2017	$1,000.00	30-03-17

Figure 23: Individual Members Payments Table

11) Group Member Payments Table

GroupMemberPayments

PaymentNo	LoanID	MemberNo	MonthOfPayment	MoneyPaid	DateofPayment
1	LN_001	MB_008	February 2017	Kshs.2,000.00	16-03-17
2	LN_001	MB_008	February 2017	Kshs.400.00	21-03-17
3	LN_001	MB_008	March 2017	Kshs.1,000.00	21-03-17
4	LN_001	MB_008	April 2017	Kshs.500.00	19-04-17
5	LN_001	MB_008	March 2017	Kshs.400.00	07-04-17

Figure 24: Group Member Payments Table

12) Group Payments Table

PaymentNo	LoanID	GroupID	MonthOfPayment	MoneyPaid	DateofPayment
1	GPLN_001	GP_003	April 2017	Kshs.800.00	22-04-17
2	GPLN_001	GP_003	May 2017	Kshs.200.00	17-05-17
3	GPLN_001	GP_003	June 2017	Kshs.500.00	09-06-17

Figure 25: Group Payments Table

13) Individual Member Defaulted Payments Table

IndividualDefaultedPayments

PaymentNo	LoanID	MemberNo	MoneyPaid	DateOfPayment	MonthOfPayment
PMT_001	LN_001	MB_002	Kshs.700.00	15-03-17	February 2017
PMT_002	LN_001	MB_002	Kshs.500.00	23-03-17	February 2017
PMT_003	LN_001	MB_002	Kshs.798.00	31-03-17	February 2017

Figure 26: Individual Member Defaulted Payments Table

14) Group Member Defaulted Payments Table

GroupMemberDefaultedPayments

PaymentNo	LoanID	MemberNo	MoneyPaid	DateOfPaym	MonthOfPayment
PMT_001	LN_001	MB_008	Kshs.300.00	14-04-17	March 2017
PMT_002	LN_001	MB_008	Kshs.500.00	19-05-17	April 2017
PMT_006	LN_001	MB_008	Kshs.150.00	18-08-17	March 2017
PMT_011	LN_001	MB_008	Kshs.400.00	19-08-17	April 2017
PMT_012	LN_001	MB_008	Kshs.200.00	18-08-17	March 2017

Figure 27: Group Member Defaulted Payments Table

15) Group Defaulted Payments Table

GroupDefaultedPayments

PaymentNo	LoanID	GroupID	MoneyPaid	DateOfPaym	MonthOfPayment
PMT_001	LN_001	GP_003	Kshs.200.00	05-07-17	May 2017
PMT_002	LN_001	GP_003	Kshs.100.00	09-08-17	May 2017

Figure 28: Group Defaulted Payments Table

16) Users Table

USERS

UserID	Name	OrganizationLevel	Password
USER_001	Ivy Muthoni	Administrator	******
USER_002	Samuel Moustapha	Administrator	******
USER_003	Gladys Mwende	User	******

Figure 29: Users Table

Input Screens/Forms

Input forms are required for easy entering of data in the system and are very crucial to the developing for the system due to their efficient user interface.

The following are the forms that were used in the design of the system:

1) Log in Form

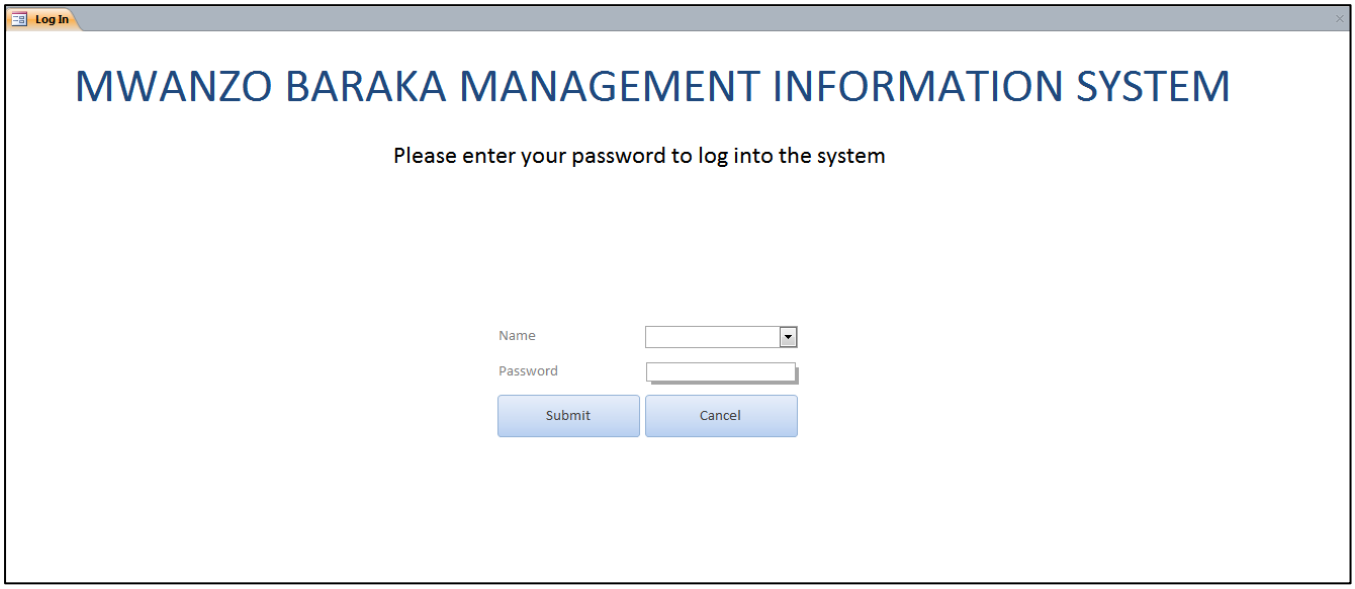


Figure 30: Log in Form

2) Splash Form

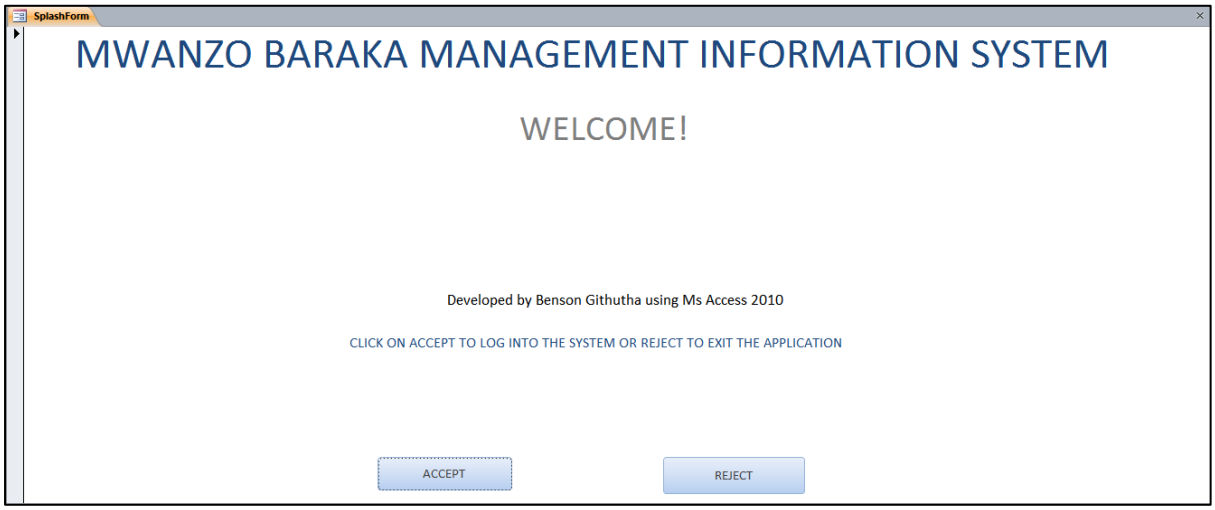


Figure 31: Splash Form

3) HOME-Switchboard

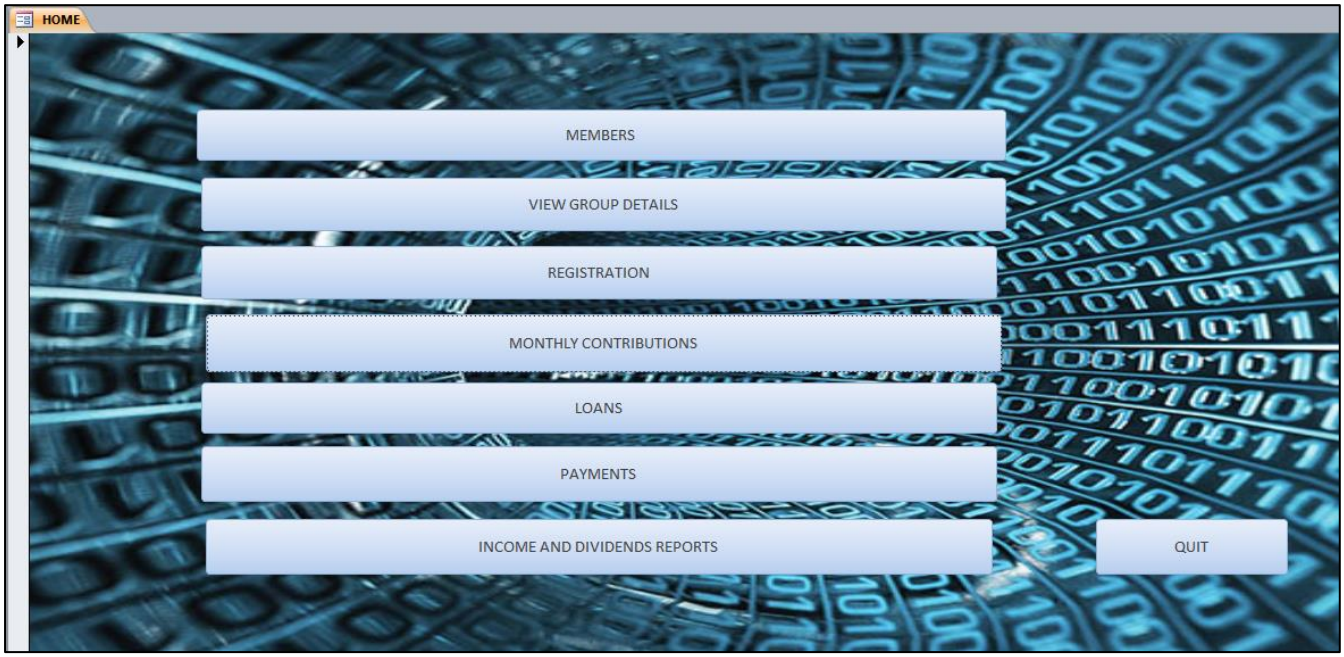


Figure 32: Switchboard

4) Members Form

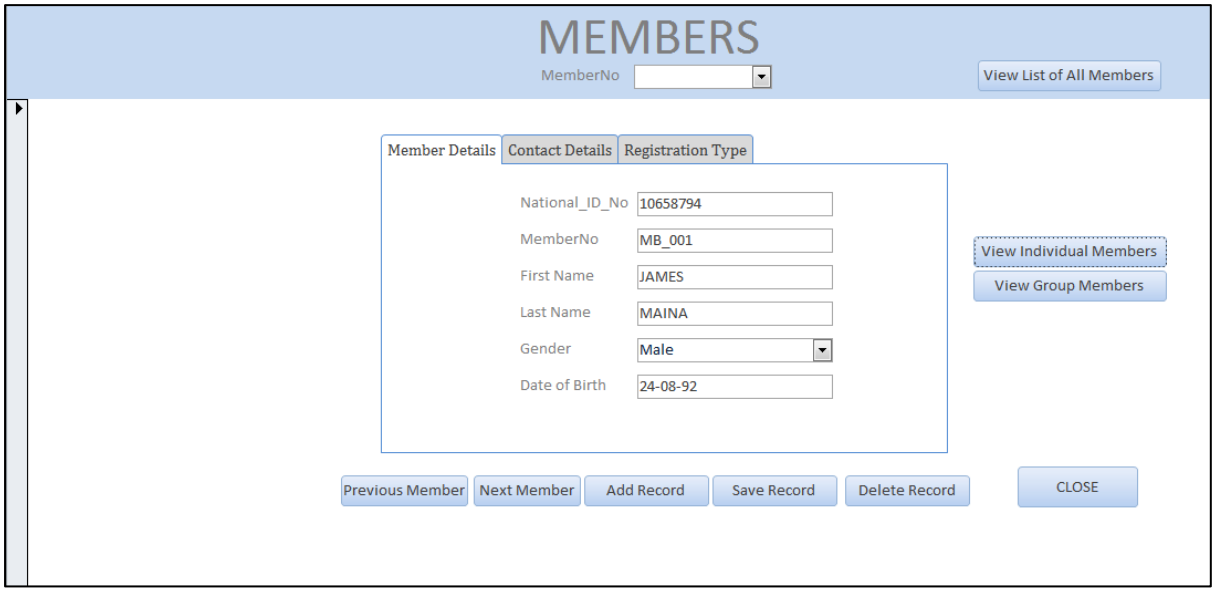


Figure 33: Members Form

5) Group Members Form

Figure 34: Group Members Form

6) Group Details Form

Figure 35: Group Details Form

7) Individual Registration Form

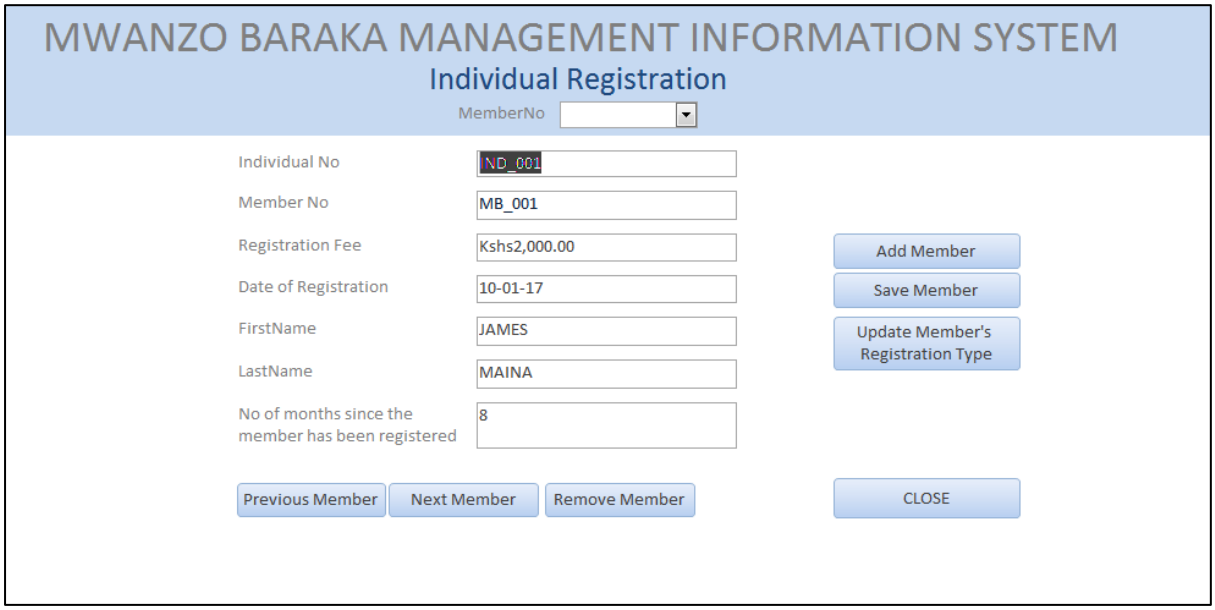


Figure 36: Individual Registration Form

8) Group Registration Form

Figure 37: Group Registration Form

9) Individual Monthly Contributions Form

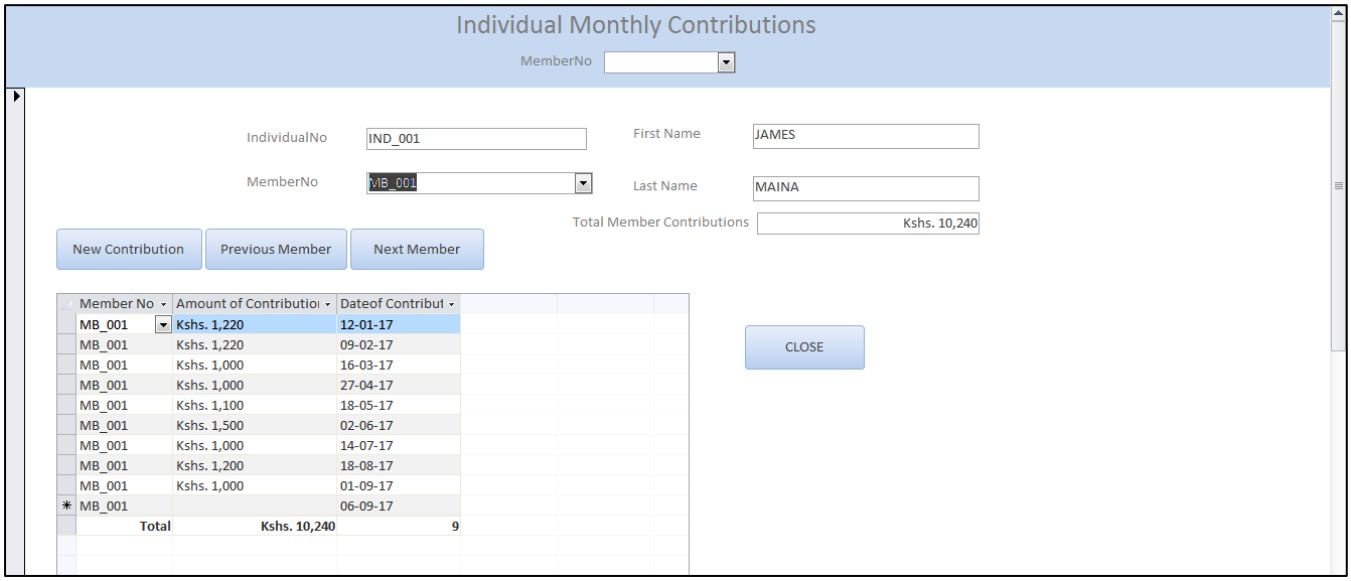


Figure 38: Individual Monthly Contributions Form

10) Group Member Monthly Contributions Form

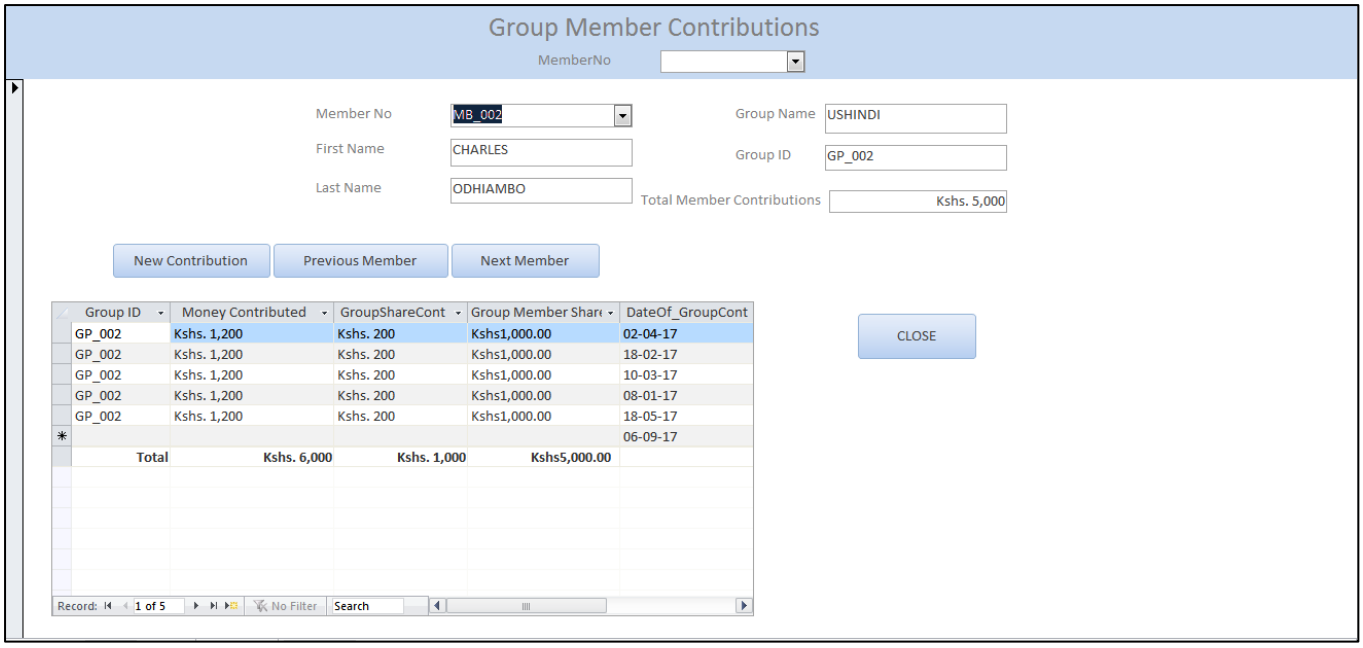


Figure 39: Group Member Monthly Contributions Form

11) Group Share Contributions Form

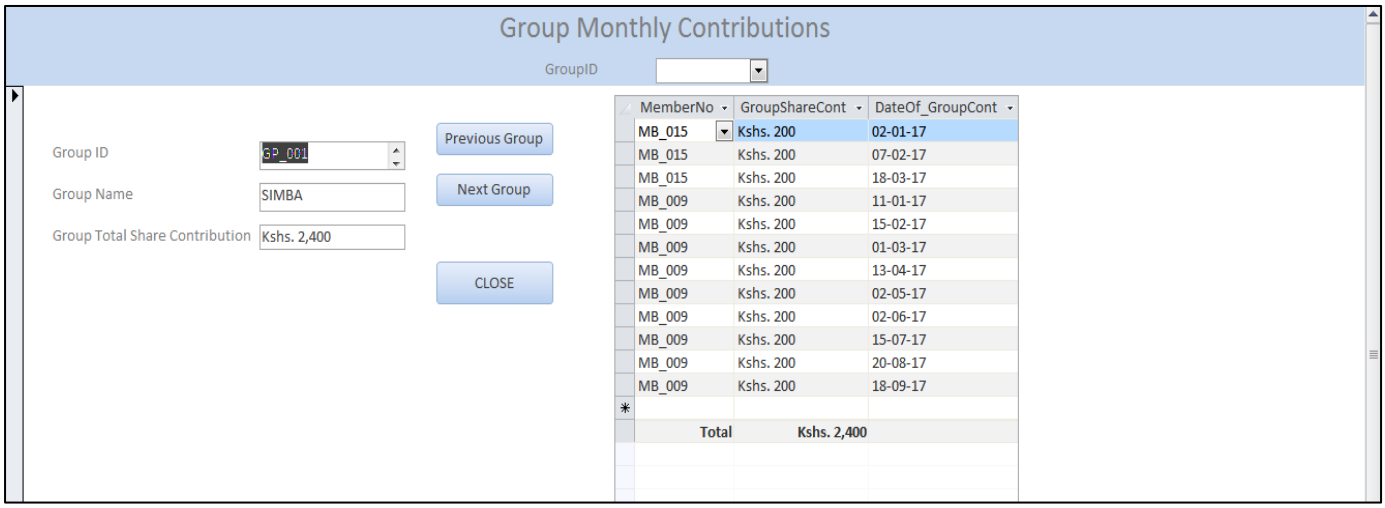


Figure 40: Group Share Contributions Form

12) Individual Loan Form

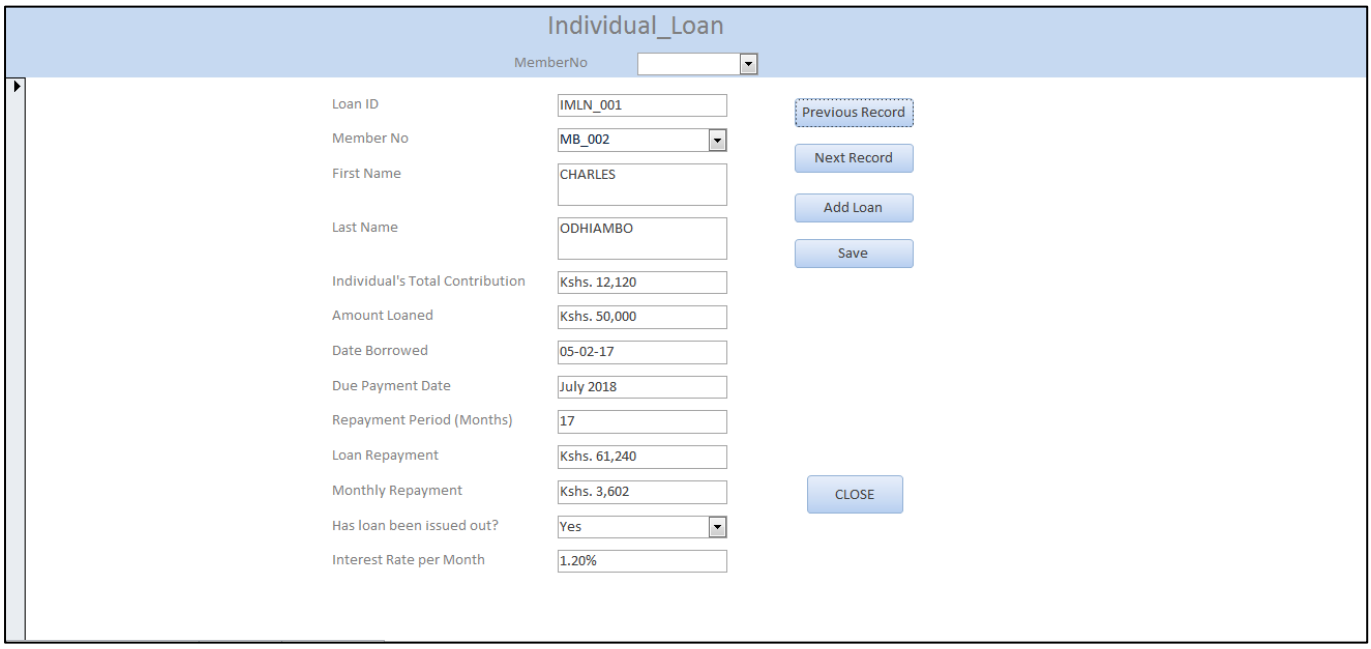


Figure 41: Individual Loan Form

13) Group Member Loan Form

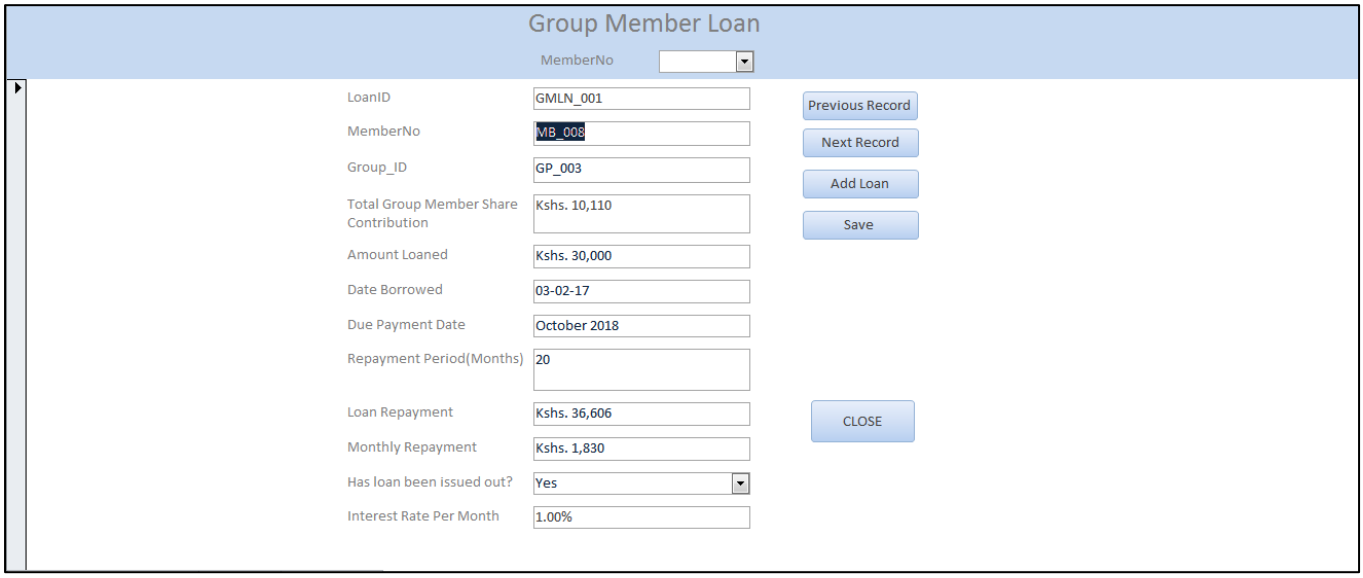


Figure 42: Group Member Loan Form

14) Group Loans Form

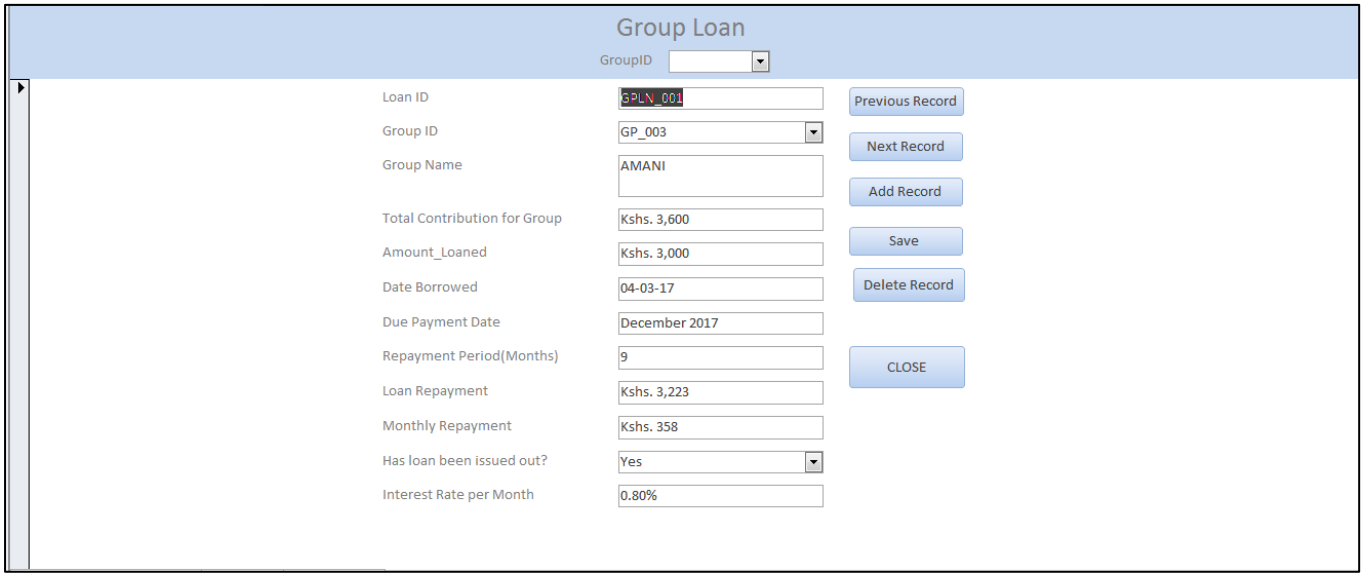


Figure 43: Group Loans

15) Individual Payments Form

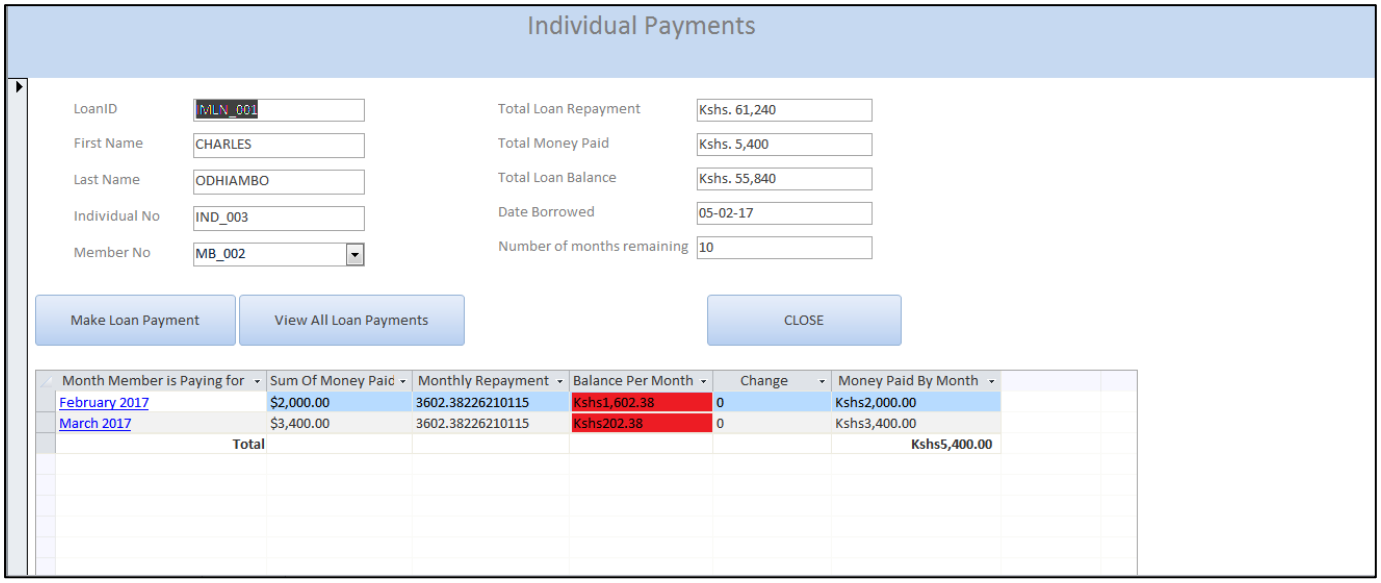


Figure 44: Individual Payments Form

16) Group Member Payments Form

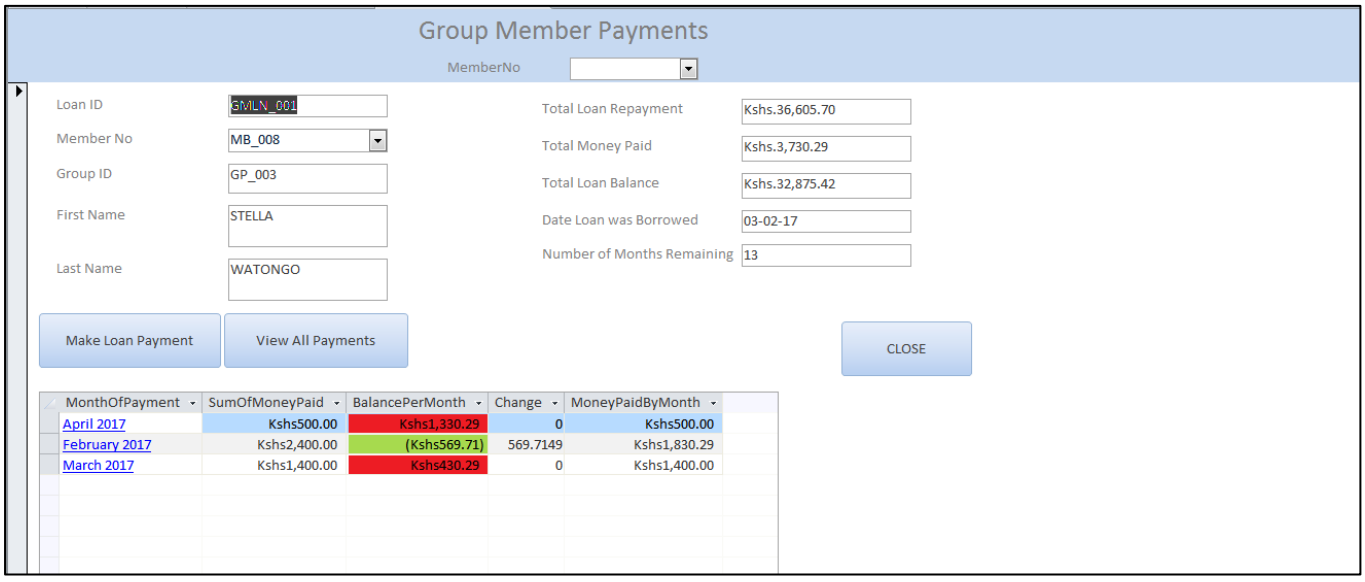


Figure 45: Group Member Payments Form

17) Group Payments Form

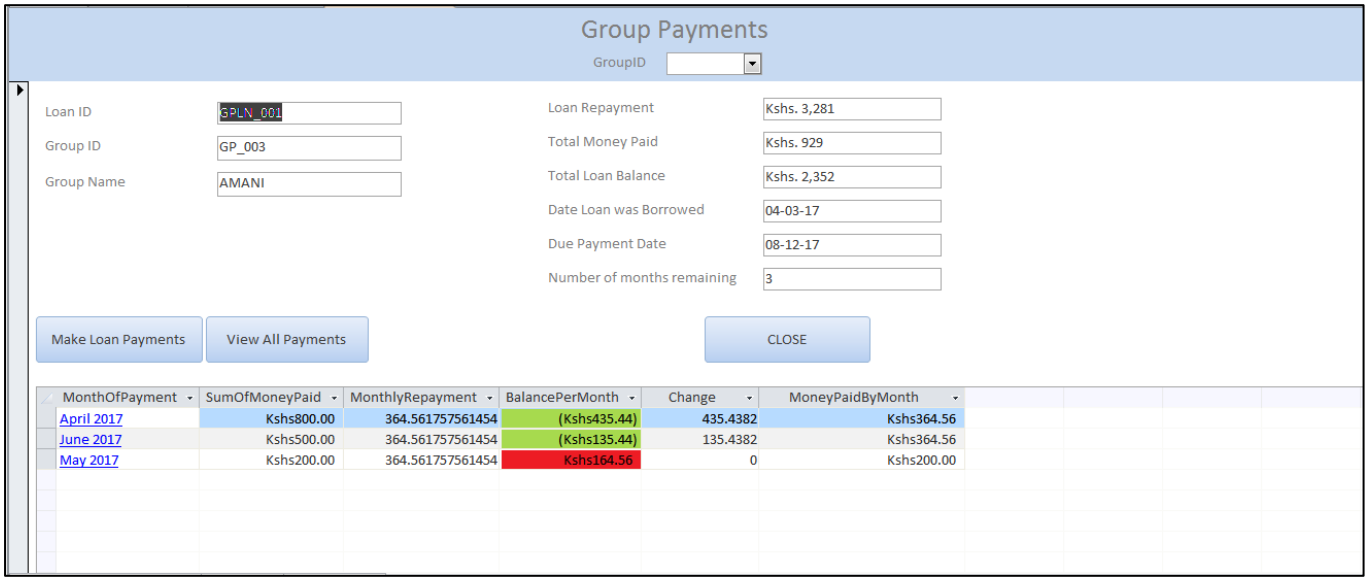


Figure 46: Group Payments Form

Output Screens

These are the displays for the information required by the user e.g. receipt statements.

They are in form of reports.

a) Members Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM

MEMBERS

Saturday, September 16, 2017

7:43:14 AM

National_ID_	MemberNo	FirstName	LastName	Gender	MobileNo	EmailAddress	PlaceofReside	DateofBirth	RegistrationType
10658794	MB_001	JAMES	MAINA	Male	(+254)722654982	jamesmaina@gmail.com	Ruaraka	24-08-92	Individual only
20546887	MB_002	CHARLES	ODHIAMBO	Male	(+254)722984922	charlesodhiambo@gmail.com	Kiambu	06-09-90	Both Individual & Group
94458945	MB_003	MERCY	WAMAI	Female	(+254)795982989	mercywamai@gmail.com	Komarock	06-12-92	None
26494518	MB_004	SARAH	MUENI	Female	(+254)748864886	sarahmueni@gmail.com	Kayole	05-08-92	Group Only
15659491	MB_005	LUCY	MUTHONI	Female	(+254)738411289	lucymuthoni1@gmail.com	Embakasi	09-02-95	Individual only
86481166	MB_006	SAMMY	KINTALEL	Male	(+254)748918918	sammykintalel@gmail.com	Westlands	02-04-90	None
56484891	MB_007	FRANK	ODUOR	Male	(+254)795929818	frankoduor@gmail.com	Lavington	05-09-89	None

Figure 47: Members Report

b) Individual Members Monthly Contributions Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM

IndMonthlyContributionsDatasheet

Saturday, September 16, 2017

7:46:20 AM

IndividualContribution	Date of contribution	MemberNo
Kshs. 1,000	12-01-17	MB_005
Kshs. 1,000	15-02-17	MB_005
Kshs. 2,000	16-03-17	MB_005
Kshs. 1,500	20-04-17	MB_005
Kshs. 1,200	10-05-17	MB_005
Kshs. 1,050	15-06-17	MB_005
Kshs. 1,200	20-07-17	MB_005
Kshs. 1,000	11-08-17	MB_005
Kshs. 1,220	12-01-17	MB_001
Kshs. 1,220	09-02-17	MB_001
Kshs. 1,000	16-03-17	MB_001
Kshs. 1,000	27-04-17	MB_001

Figure 48: Individual Members Monthly Contributions Report

c) Individual Members Loans Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM

Individual Members Loans

Saturday, September 16, 2017
7:48:56 AM

Loan ID	Member No	First Name	Last Name	Amount Loaned	Date Borrowed	Due Payment Month	Repayment Period(Months)	Was Loan Issued Out?
IMLN_001	MB_002	CHARLES	ODHIAMBO	Kshs. 50,000	05-02-17	July 2018	17	Yes
IMLN_002	MB_014	ELSIE	ATOTI	Kshs. 25,000	06-04-17	December 2018	20	Yes
				Kshs. 75,000				

Figure 49: Individual Members Loans Report

d) Individual Members Payments Report

MWANZO BARAKA MANAGEMENT INFORMATION SYSTEM

Individual Members Payments

Saturday, September 16, 2017
7:51:55 AM

Loan ID	Month Member Paid for	MoneyPaid	Date of Payment	Total Money Paid
IMLN_001	February 2017	$500.00	15-02-17	
IMLN_001	February 2017	$600.00	23-02-17	1100
IMLN_001	February 2017	$900.00	28-02-17	2000
IMLN_001	March 2017	$1,000.00	16-03-17	
IMLN_001	March 2017	$200.00	16-03-17	
IMLN_001	March 2017	$1,200.00	21-03-17	3400
IMLN_001	March 2017	$1,000.00	24-03-17	4400
IMLN_001	March 2017	$1,000.00	30-03-17	
	Totals	$6,400.00		

Figure 50: Individual Members Payments Report

CHAPTER FOUR: SYSTEM TESTING AND DEMONSTRATION

Objectives of the testing

- To ensure there are no errors in calculation of interests, payments and dividends and therefore enhancing accuracy of the output.
- To minimize redundancy of records.
- To ensure that the new system is user friendly.

Data Testing Approaches

The system was tested out:

By Dry Running

I ran through the system manually and wrote the code after noting down some errors in the system.

By Use of Compilers

Some errors were still found after when I was done coding. I used the compilers to find and correct any logical and syntax error.

By Use of Test Data

Efficiency was very key in my objectives and therefore I had to ensure that there would be no error in the system. Therefore I opted for the use of test data and trial runs and after getting accurate and correct result, I was satisfied that the system is efficient.

By Use of Actual Data

The researcher entered the organization's records into the system and the calculations were carried out automatically. The results were accurate therefore proving the system to be efficient.

Data Validation Approaches

The approaches used were Black Box testing and White Box testing.

Black Box Testing

Black box testing is the software testing method which is used to test the software without knowing the internal structure of the system.

White Box Testing

White box testing is the software testing method in which internal structure is being known to tester who is going to test the system.

Data testing plan

Testing text Data Type

Field	Input	Expected results	Remarks	Passed?
National_ID	10658794	Accepted	Valid	Yes
MemberNo	MB_001	Accepted	Valid	Yes
MobileNo	0733za6767	Rejected	Valid	No

Table 28: **Testing text Data Type**

Testing Date/Time Data Type

Data entered	Expected	Remarks	Test Passed?
568AD	Rejected	Invalid	Yes
10456	Rejected	Invalid	Yes
8th May 2017	Accepted	Invalid	No
8/9/06	Accepted	Valid	Yes

Table 29: Testing Date/Time Data Type

Testing Currency Data Type

Data entered	Expected	Remarks	Test Passed?
Kshs.200m	Rejected	Invalid	Yes
231321	Accepted	Valid	Yes
234324/46/4646	Rejected	Invalid	Yes

Table 30: Testing Currency Data Type

CHAPTER FIVE: USER MANUAL

This involves the:

- Installation of the System
- Assigning of privileges to users.

Hardware Specifications

The system requires the following to function effectively:

- At least 512 MB RAM.
- 1 GHz processor speed and above.
- At least 80 GB Hard disk capacity.
- A compatible DVD Drive.

Software Specifications

- An operating system of either Windows XP, Vista or Windows 7/8. (Works on both X 32 and X64 bit)
- A database management system of Microsoft 2010 onwards (Cannot work on earlier Versions).
- Microsoft Visual Basic 6.0 (for coding and development of the system)

System loading and installation process

The person installing should have administrator privileges and should ensure the following:

- Ensure that the computer has a functioning CD/DVD drive.
- Ensure that the computer meets the hardware and software requirements as stated above.
- He or she should then insert the disk with the system into the CD/DVD drive.

Steps

a) Run the computer in the appropriate operating system.
b) Click on the start button and go to My Computer.
c) Click to open it and select the CD drive.
d) Select “MWANZO BARAKA INFORMATION SYSTEM”.
e) Copy the database file to the desktop of your computer

System loading process

a) Double click to open.
b) Click on the 'Accept' button on the Splash Form.
c) Enter database password as assigned in the user manual i.e. "**mwanzo**".

NB: Type the password, which if correct will log you in, but if false you will remain at that stage until you provide the password or quit the system.

Navigation guide

a) After login and, a form named "HOME' will appear.
b) From here, there are options to:
    - Record new members in the organization using forms or view a list of them through reports. From the "MEMBERS" form, you can view those who are registered as Individual Members or Group Members or view a list of each of them through reports.
    - View all group members using the "GroupMembers" form or all groups through the 'Group_Details' form or a list of the groups through reports. You can also view the members of each group through a dialog form called "GroupMembers" or view a list of them through reports.
    - Register new Individual members and groups. In the "Groups_Registration" form, you can record the members of the group using forms.
    - Add new contributions to the organization either as an Individual Member or a Group Member. You can also view the contributions made by each through reports. Moreover, you can view the group share contribution of each group member using the "GroupMonthlyContribution" form.
    - Add new loans or view existing loans either for an individual member, group member or group.
    - Make normal loan payments or payments for penalized defaulted amounts for either an individual, group member or group loan. You can also view a list of the payments through reports.
    - View total share contributions and dividends for the shareholders.
c) Tables are made purposely to store data.
d) Data is only inputted through forms specially designed for that purpose.
e) Reports are generated to give a list of people, contributions or payments in the database and can be printed. Invoices and cash receipts are also in form of reports.

f) If you wish to exit the system click the “Quit” button on the “Home” form.

Ending the program

a) Save all the changes made to the records.
b) Close all forms and reports open in the system.
c) On the “HOME” form click on the “QUIT” button.

Procedure for generating output

The various modes of displaying information are:

Command buttons have been provided for switching into various forms and reports.

The user has the ability to print the data stored in the reports. One should have a printer installed to do so.

System security and control measures

The new system has put in place the following control measures to ensure data security:

- Use of passwords which prevent unauthorized access into the system.
- The system cannot be accessible to strangers or even the clients themselves.
- Setting of user privileges, modification levels and restrictions to ensure that data is only entered in an official way.
- Presence of different users and administrators to the system.
- The software is copyrighted.

For security, the user of the computer is supposed to carry out the following:

- Scan the computer first for viruses before running the system.
- Locking the computer room containing the system when not in use.
- Obtaining a UPS for the computer to regulate the power in.
- Logging off the system after use.
- Changing the password at frequent intervals.
- Safeguarding of the components of the computer

System changeover

This is an implementation technique where the new Information System is installed and the users trained to use it. The types of system changeover are:

Direct Changeover

This is where the old system is discarded and a new system introduced immediately.

Phased Changeover

This is where a new system is introduced in phases until when the system is completely implemented or installed.

Parallel Changeover

This is where the new and the old system are used concurrently until the new system is found to be efficient and the old new system is then discarded.

Pilot Changeover

This is where a system is introduced first in one branch or department of the organization and the running of the system is observed keenly by the administration before being introduced in the other branches.

Error handling

The system handles errors in the following ways:

- It doesn’t accept data of invalid data types.
- It gives corrections to users on how to correct their errors using the Validation text.

CONCLUSION

This new system will be of great advantage to the Mwanzo Baraka Organization. It will raise the organization's standards and enable it to be among the best organizations and Sacco's dealing with issuing out of cheap loans to its members because it does not charge large interests and penalties like the banks. Aside from that, the secretaries' work has been lessened by 100% as the organization's system is fully computerized.

RECOMMENDATIONS

The following modifications are recommended to be implemented in the system:

- Advanced security measures can be used to protect stored data from malicious people. Examples of such measures are fingerprint reading and use of CCTV cameras.
- Modifying of the user-interface to make the best screen appearance.
- Use of up- to-date antivirus so that viruses cannot have a hidden access into the system's files.

The system cannot, however be modified without prior permission from the System Developer or the System Administrator.

BIBLIOGRAPHY

In order to develop the system, I used various sources to get some guidance in the construction of the system. The following are the sources that I used in getting assistance:

1. Longhorn Computer studies Form3 & 4 textbook.
2. Log On Computer Form 3 & 4 textbook.

APPENDICES

APPENDIX I: SYMBOLS USED

The following is a table that shows the symbols used in the various flowcharts and their meanings;

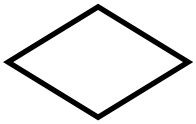
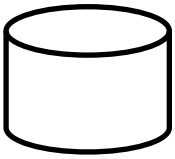
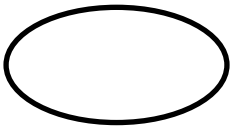
Symbol	Name	Meaning
	Arrow	Direction of logic flow.
	Rectangle	Indicates a Process
	Decision box	Selection of options that suit the user
	Parallelogram	Input or output
	Magnetic disk	Updates and accesses a file in a magnetic disk
	Document	Indicates a form or a report.
	Oval	Indicates the beginning or end of the flowchart.
	Keyboard	Indicates the keying in of data.

Table 31: Flowchart symbols

APPENDIX II: DEFINITION OF TERMS

These are the definitions of the technical terms used in the design and construction of the system:

Flowchart- is a diagrammatic representation of the overall functionality of a system used in system design.

In Coding

These are some of the prefixes used in naming of controls during coding. They are internationally accepted.

Txt	Textboxes e.g. txtFirstName
Frm	Forms e.g. frmMembers
Rpt	A report e.g. rptIndividualDetails
Cmd	Command box e.g. cmdclose
Msgbox	Message Box e.g. msgbox “What is your name?”
Cbo	Combo box e.g. cboname

Table 32: Prefixes of controls

Programming- is the writing of instructions to be followed by the system during execution.

System- is a major component consisting of smaller sets of components which work to achieve a common goal.

APPENDIX III: SYSTEM CODING

```
Private Sub MonthOfPayment_Click()

On Error GoTo MonthOfPayment_Click_Err

    If (MsgBox("Do You Want To View Normal Payments for Loan ?", 4) = 6) Then

       DoCmd.OpenForm FormName:="IndPaymentsSubform",
WhereCondition:="MemberNo = '" & Me.MemberNo & "' AND MonthOfPayment = '" &
Me.MonthOfPayment & "'", DataMode:=acFormReadOnly, WindowMode:=acDialog,
View:=acFormDS

   Else

       If (MsgBox("Do You Want To View Payments for Penalized Amount ?", 4) = 6) Then

          DoCmd.OpenForm FormName:="IndividualDefaultedPaymentsSubform1",
WhereCondition:="MemberNo = '" & Me.MemberNo & "' AND MonthOfPayment = '" &
Me.MonthOfPayment & "'", DataMode:=acFormReadOnly, WindowMode:=acDialog,
View:=acFormDS

       End If

   End If



MonthOfPayment_Click_Exit:

   Exit Sub


MonthOfPayment_Click_Err:

   MsgBox Error$

   Resume MonthOfPayment_Click_Exit

End Sub



Private Sub MonthOfPayment_Click()
```

```
On Error GoTo MonthOfPayment_Click_Err

    If (MsgBox("Do You Want To View Normal Payments for Loan ?", 4) = 6) Then

       DoCmd.OpenForm FormName:="IndPaymentsSubform",
WhereCondition:="MemberNo = '" & Me.MemberNo & "' AND MonthOfPayment = '" &
Me.MonthOfPayment & "'", DataMode:=acFormReadOnly, WindowMode:=acDialog,
View:=acFormDS

   Else

       If (MsgBox("Do You Want To View Payments for Penalized Amount ?", 4) = 6) Then

          DoCmd.OpenForm FormName:="IndividualDefaultedPaymentsSubform1",
WhereCondition:="MemberNo = '" & Me.MemberNo & "' AND MonthOfPayment = '" &
Me.MonthOfPayment & "'", DataMode:=acFormReadOnly, WindowMode:=acDialog,
View:=acFormDS

       End If

   End If



MonthOfPayment_Click_Exit:

   Exit Sub


MonthOfPayment_Click_Err:

   MsgBox Error$

   Resume MonthOfPayment_Click_Exit

End Sub
```