



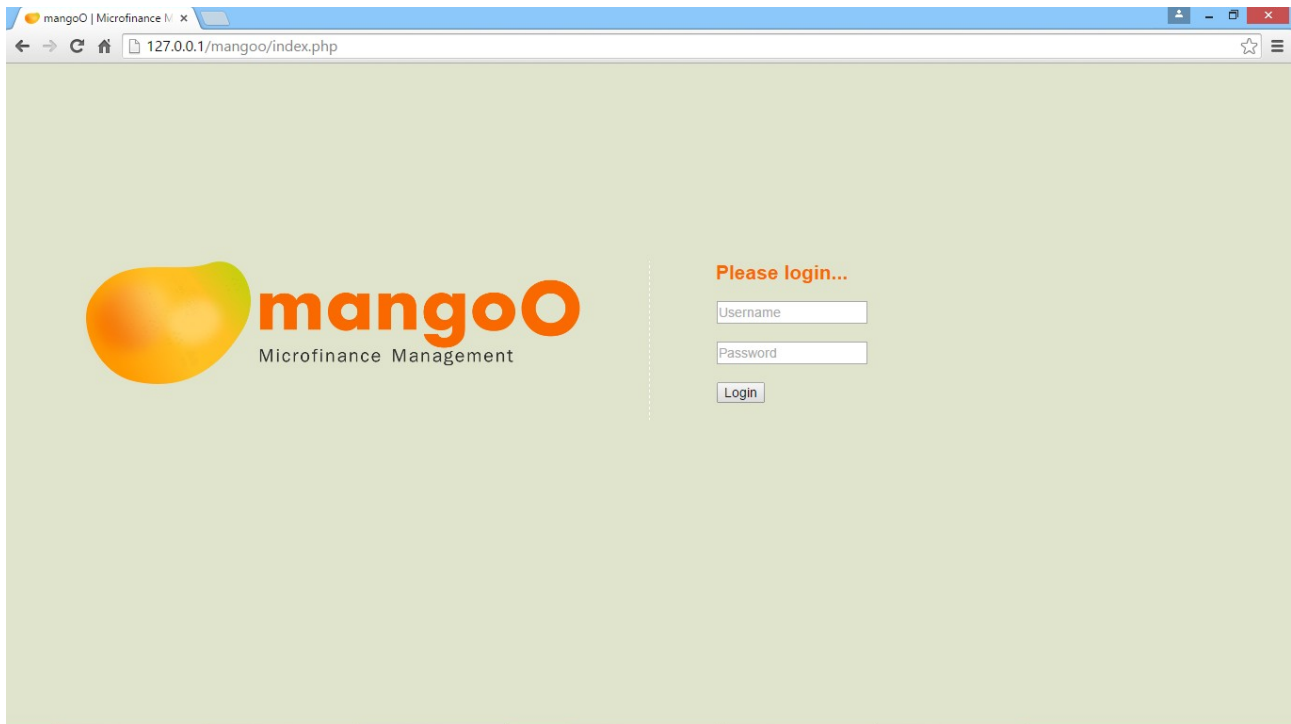
**v4.0.0**

***User Manual***

# 1 Getting Started

mangoO Microfinance Management is a software solution for small scale (usually single-branch) micro-finance institutions. It was first developed for Luweero Diocese SACCO (Savings and Credit Cooperative) in Luweero, Uganda.

As mangoO is based on web technology, you will need a web browser to use the program. It is recommended to use Mozilla Firefox, Chrome, or Chromium. Your administrator should have provided you with an address or link to gain access to mangoO.



On the start page of mangoO, please provide a valid **user name** and **password**. In case you do not possess such login information, please contact your system administrator.

Overdue Subscription Fees		
Cust. No.	Customer Name	Last Paid
22/2006	Arnetta Lobato	25.09.2013
11/2006	Nydia Melvin	18.01.2014
13/2006	Melania Mitchem	14.05.2014

Defaulted Loan Instalments			
Loan No.	Customer Name	Due Date	Amount Due
L 105-1	Latoya Ensley	30.11.2012	525,000 UGX
L 89-1	Susie Cratty	11.04.2015	143,333 UGX
L 161-1	Gwendolyn Kimbro	23.04.2015	2,860,000 UGX
L 125-1	Terrie Fasset	02.05.2015	165,000 UGX
L 182-1	Sharell McCormick	12.05.2015	108,333 UGX
L 20-1	Berry Steve	12.05.2015	143,333 UGX
L 89-1	Susie Cratty	12.05.2015	143,333 UGX
L 125-1	Terrie Fasset	02.06.2015	165,000 UGX
L 182-1	Sharell McCormick	12.06.2015	108,333 UGX
L 152-1	Melina Zak	30.06.2015	298,500 UGX
L 156-1	Shawnta Deltoro	30.06.2015	460,000 UGX
L 151-1	Glynda Delcambre	30.06.2015	450,000 UGX
L 146-1	Kai Ridlon	30.06.2015	154,000 UGX
L 173-1	Zetta Zambrano	30.06.2015	478,000 UGX
L 178-1	Adah Brumbaugh	30.06.2015	155,000 UGX
L 186-1	Lorina Olden	30.06.2015	135,750 UGX
L 187-1	Ty Stgelais	30.06.2015	528,000 UGX
L 189-1	Vanita Eaves	30.06.2015	10,000 UGX
L 193-1	Jayson Reader	30.06.2015	100,000 UGX
L 196-1	Nan Amarante	30.06.2015	355,000 UGX

## 1.1 Dashboard

After logging in, the system will take you to the **dashboard**. Depending on the system's basic settings (see 8.1.1), you will find different types of information.

The *Overdue Subscription Fees* list will display all customers whose **annual subscription** has expired. In order to access a customer's record, click the respective customer number. Depending on the respective setting (see Fehler: Referenz nicht gefunden), customers might automatically be set to inactive, if their subscription has expired.

The *Defaulted Loan Instalments* table shows all currently **defaulted loan instalments**. In order to access the loan's record, click the respective loan number. Depending on the respective setting (see 8.2.5), defaulters might automatically be charged a predefined default fine which will be deducted from their savings accounts.

The different **statistics widgets** present a momentary snapshot of the institution's business situation.

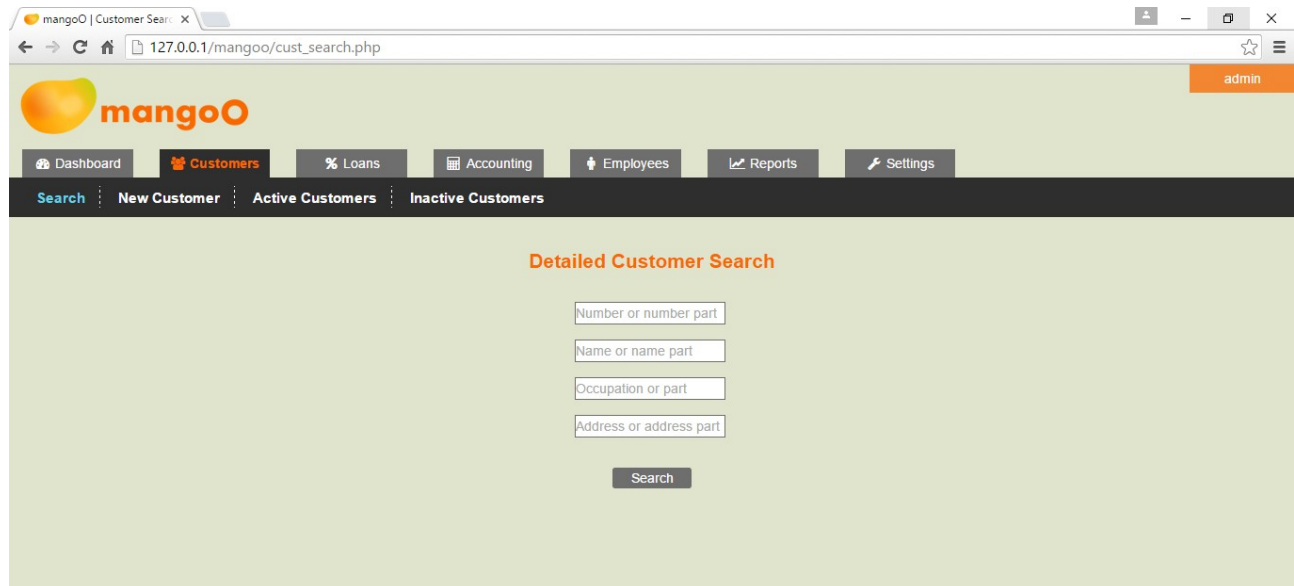
The options in the upper menu bar give you quick access to the most frequently used functions. **Search Customers** accesses the customer search form (see 2.1), **Search Loan** the loan search form (see 4.1), and **New Customer** allows you to create a new customer record (see 2.2).

## 2 Customers

Under **Customers** you will find all tools for managing customer records.

### 2.1 Customer Search

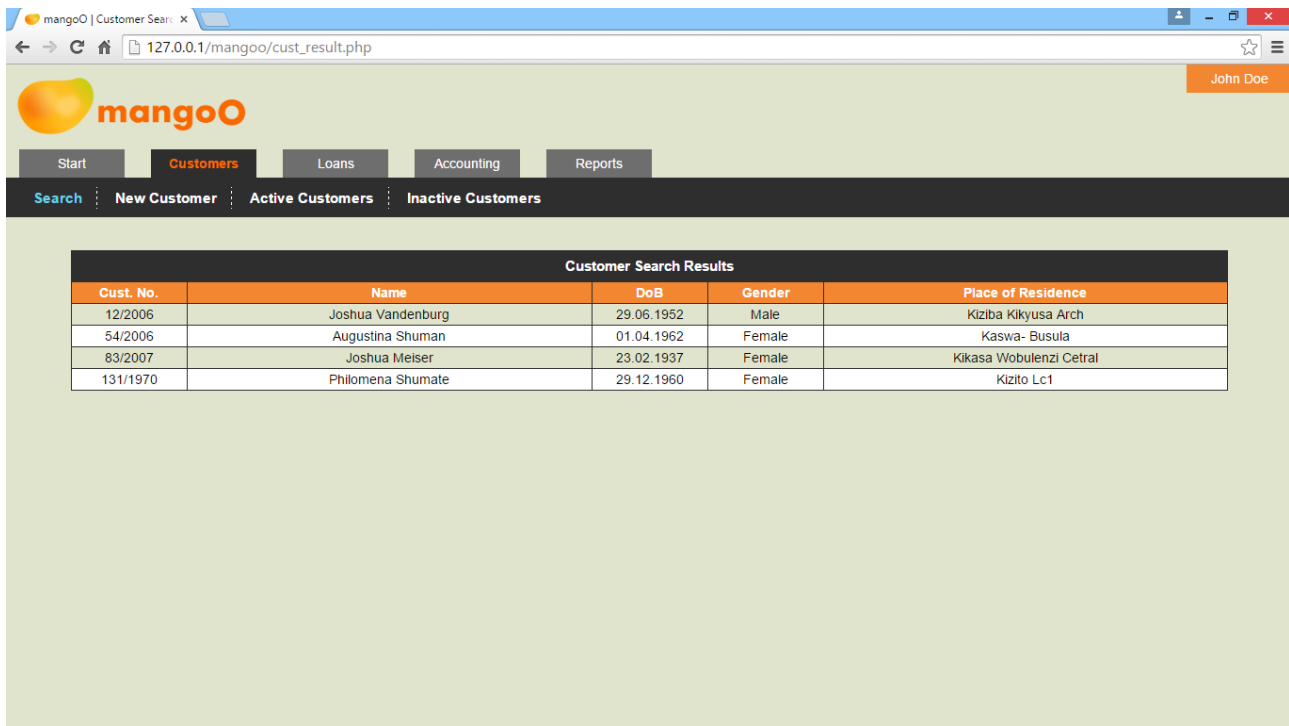
The customer search form allows you to search the database for customers depending on a variety of search criteria.

The screenshot shows a web browser window with the URL 127.0.0.1/mangoo/cust\_search.php. The page features the mangoO logo and a navigation bar with tabs for Dashboard, Customers (active), Loans, Accounting, Employees, Reports, and Settings. Below the navigation bar, there are sub-tabs for Search, New Customer, Active Customers, and Inactive Customers. The main content area is titled "Detailed Customer Search" and contains four input fields: "Number or number part", "Name or name part", "Occupation or part", and "Address or address part". A "Search" button is located below these fields.

The input fields allow for **searches by customer details** such as the customer's number or part of it, name or name part, occupation or part of it, address or address part. As such details are, by nature, ambiguous, the search will take you to a result page. The result list can be exported by clicking **Export**.

mangoO will search for any customer on the database whose details match **all** specified search criteria. For example, a search for occupation *teacher* and address *Luweero* will yield a list of all customers who work as teachers and reside within Luweero. Customers who are teachers but reside in other places will not be included in the result.

The search is **case-insensitive** and works regardless of the search term's position within the respective data field. For example, a search for the name string *shu* will yield *Shumate* as well as *Joshua*. If a given search criteria does not match with any details in the database, the search result list will remain empty.



mangoO | Customer Search

127.0.0.1/mangoO/cust\_result.php

John Doe

Start Customers Loans Accounting Reports

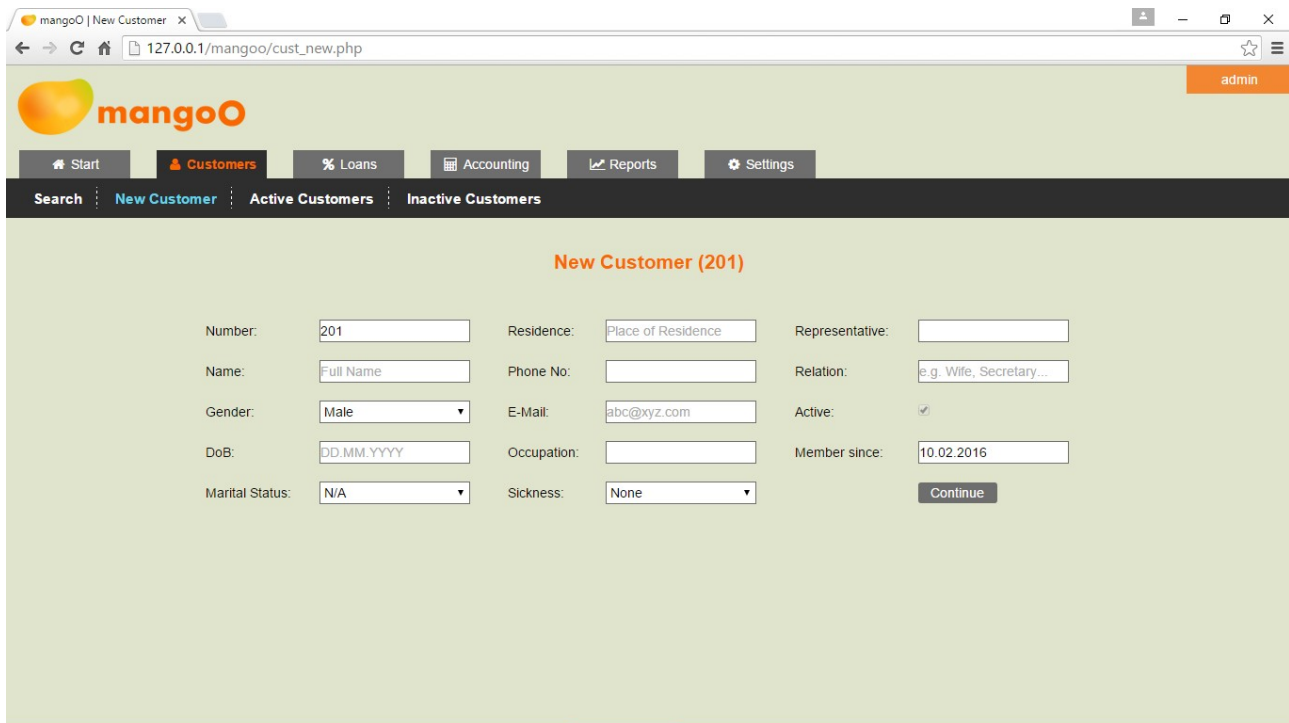
Search New Customer Active Customers Inactive Customers

Customer Search Results				
Cust. No.	Name	DoB	Gender	Place of Residence
12/2006	Joshua Vandenburg	29.06.1952	Male	Kiziba Kikyusa Arch
54/2006	Augustina Shuman	01.04.1962	Female	Kaswa- Busula
83/2007	Joshua Meiser	23.02.1937	Female	Kikasa Wobulenzi Cetral
131/1970	Philomena Shumate	29.12.1960	Female	Kizito Lc1

In order to access a customer's record from the search result page, click the respective customer's number.

## 2.2 New Customer Record

This page allows you to enter a new customer record into the database.



mangoO | New Customer

127.0.0.1/mangoO/cust\_new.php

admin

Start Customers Loans Accounting Reports Settings

Search New Customer Active Customers Inactive Customers

**New Customer (201)**

Number: 201 Residence: Place of Residence Representative:

Name: Full Name Phone No: Relation: e.g. Wife, Secretary...

Gender: Male E-Mail: abc@xyz.com Active: ☒

DoB: DD.MM.YYYY Occupation: Member since: 10.02.2016

Marital Status: N/A Sickness: None

Customer numbers are automatically generated and assigned by the system and cannot be altered by

the user.

The fields for name, date of birth, place of residence, and phone number are compulsory to fill. In addition, mangoO will perform consistency checks on entered phone numbers and email addresses.

The system will automatically assume the current date to be the date when the new customer registered with the institution. In case the customer joined at an earlier date, you may adjust the value of **Member since** accordingly. Please note that throughout mangoO, all dates must be given in the format DD.MM.YYYY (for example 03.01.2016).

New customers are by definition considered to be active. Thus, the activity status cannot be changed on registration. Finally, a receipt number for the entrance fee must be specified.

On clicking **Continue**, the new record will be written to the database. In a next step, mangoO will allow you to upload a picture of the respective customer. Permissive file formats are JPG, JPEG, PNG, TIF, and TIFF. In case you do not wish to upload a picture, choose **Skip**.

## 2.3 Predefined Lists of Customers

In addition to the search function, mangoO offers two predefined lists of customers by status.

### 2.3.1 List of Active Customers

The short link **Active Customers** will show a list of all customers whose status is currently set to **Active**. You may access a particular record by clicking the respective customer number.

Clicking **Export** above the list will generate an XLS file which can then be altered, printed, sent, or otherwise used outside mangoO.

### 2.3.2 List of Inactive Customers

The short link **Inactive Customers** will show a list of all customers whose status is currently inactive. You may access a particular record by clicking the respective customer number.

Clicking **Export** above the list will generate an XLS file which can then be altered, printed, sent, or otherwise used outside mangoO.

## 2.4 Customer Details Page

When retrieving a customer's record, either through searching or through selection from one of the lists, mangoO displays all information on the respective customer on a comprehensive details page.

### 2.4.1 Basic Customer Data

The data fields on the left-hand side show the customer's basic data. They can be changed any time by overwriting the respective field and clicking **Save Changes**.

Every data update will be logged by the system and displayed in **Updated on / by**. Due to the

nature of the information, the data in **Member since**, **Subscription paid until**, and **Updated on / by** cannot be changed manually.

#### 2.4.1.1 Customer's Photo

In case a photo has been uploaded for the respective customer (see 2.2), his/her picture will show on the left side of the details page. Clicking it allows to upload a new photograph for the respective user. If no photo has been uploaded so far, a place-holder picture will be shown. Click it to upload a new photograph for the respective customer.

The screenshot shows the mangoO Customer details page for Huldrych Zwingli (004/2006). The page layout includes a header with the mangoO logo and navigation tabs (Start, Customers, Loans, Accounting, Reports, Settings). Below the header is a sub-navigation bar with links like Search, Deposit, Withdrawal, Share Buy, Share Sale, New Loan, New Customer, Active Cust., and Inactive Cust. The main content area displays the customer's profile information, including a photo, name, occupation, marital status, gender, date of birth, residence, sickness, subscription expiration, member since date, and updated on/by date. A 'Save Changes' button is located at the bottom right of the profile section. To the right of the profile information are three tables: 'Savings Account (Recent Transactions)', 'Loans Account', and 'Share Account'.

Date	Transaction Type	Amount	Receipt/Slip
31.12.2015	Savings Interest	1,001 UGX	R
09.02.2015	Withdrawal	-82,183 UGX	S 54561
01.01.2015	Deposit	123,183 UGX	R 0
Balance: 42,001 UGX			

No.	Status	Total Repay	Remaining	Rate Due
-----	--------	-------------	-----------	----------

Number of Shares	Value of Shares
4	80,000 UGX

#### 2.4.2 Membership Renewal

In case the **annual subscription** check is enabled (see 8.1) and the customer's subscription has expired, a warning message will appear and mangoO will automatically show a renewal form below the customer's basic data.

By default, the system assumes the current date to be the date of membership renewal. Should the customer have renewed his membership earlier, please adjust the date accordingly. You must then specify a receipt number and choose whether or not the subscription fee should be deducted from the customer's savings account. Clicking **Renew Membership** will renew the customer's subscription for one year and automatically set his status to active.

**Jean Calvin (3/2006)**

Name: Jean Calvin Residence: Geneva Sickness: None

Gender: ☒ Male ☐ Fem. ☐ Inst. Phone No: 0760-548193 Member since: 07.09.2006

DoB: 21.11.1961 E-Mail: j.calvin@reformed.org Subscription paid until: 01.01.2016

Marital Status: Married Representative: Marie Calvin Updated on / by: 31.07.2015 / admin

Occupation: Reformer Relation: Wife Active: ☒

[Update](#) [Renew](#)

31.07.2015

Receipt No.

☐ deduct from Savings

[Renew Subscription](#)

**Savings Account (Recent Transactions)**

Date	Transaction Type	Amount	Receipt/Slip
01.01.2015	Deposit	4,000 UGX	R 0
Balance: 4,000 UGX			

**Loans Account**

No.	Status	Total Repay	Remaining	Rate Due
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**Share Account**

Number of Shares	Value of Shares
2	40,000 UGX

### 2.4.3 Accounts' Details

The right-hand section provides you with a summary of the customer's accounts. For the sake of space, the **savings account table** will show the five most recent transactions only. You may access a complete list of all transactions on the savings account by clicking **Savings Account** in the table header. The shared column for Receipt / Slip numbers indicates the nature of a given number by a preceding *R* for receipts and a preceding *S* for withdrawal slips. (See 3.2 for further details on the savings account.)

The **loans account table** shows all past and recent loans. You can access the details of a particular loan by clicking on the loan number. (See 4 for further details on the loans account.)

Lastly, the **share account table** gives a summary on the currently owned number of shares and the combined value of these shares. Clicking on **Share Account** in the table header will take you to the share account with a complete list of all transactions. (See 3.1 for further details.)

### 2.4.4 Additional Options in the Menu Bar

When viewing customer details, the menu bar above provides you with a number of different options regarding that respective customer.

[Search](#) [Deposit](#) [Withdrawal](#) [Share Buy](#) [Share Sale](#) [New Loan](#) [New Customer](#) [Active Cust.](#) [Inactive Cust.](#)

The options **Deposit** and **Withdrawal** will both take you to the customer's savings account where you may perform either operation (see 3.2).

The **Share Buy** and **Share Sale** options will take you to the customer's share account where you may add, transfer, or sell shares (see 3.1 for more information on shares).

The **New Loan** option allows you to create a new loan application for the customer (see 4.4).



## 3 Account Types

By default, mangoO keeps three different accounts for each customer: Share Account, Savings Account, and Loans Account.

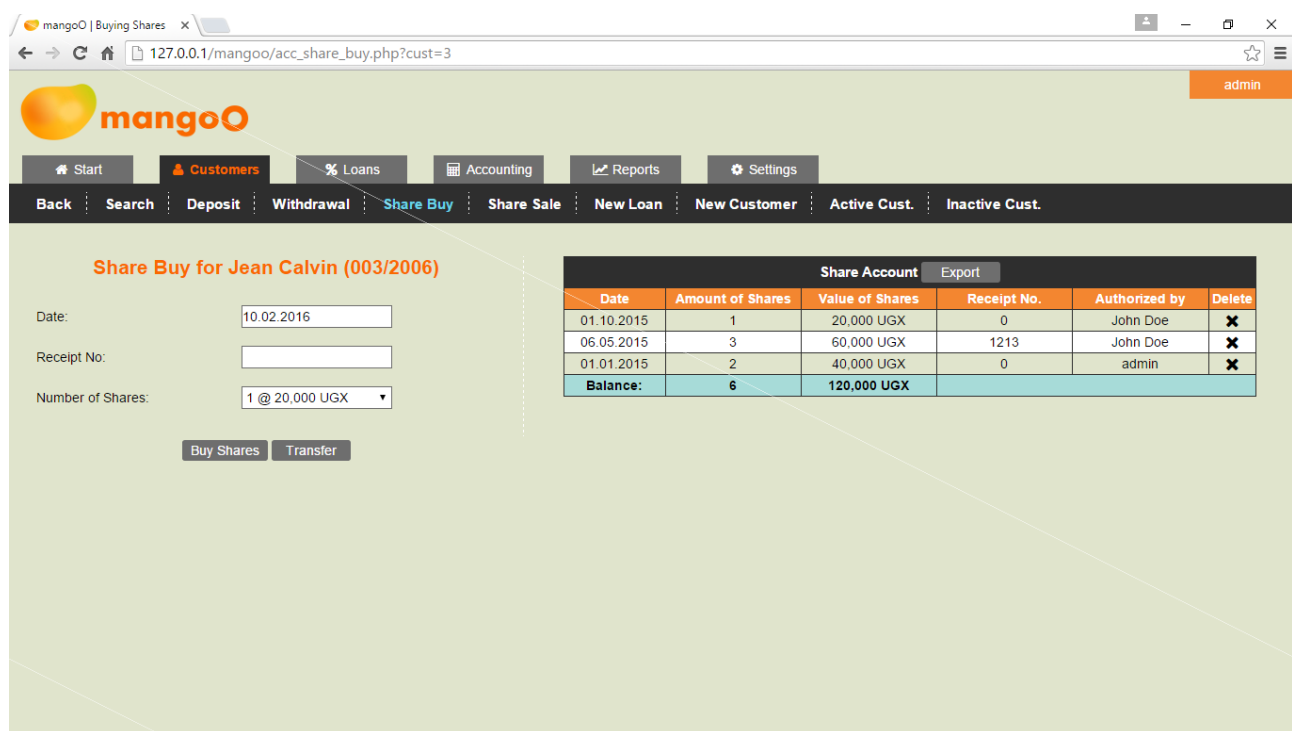
### 3.1 Share Account

You may access a customer's share account either by clicking **Share Account** in the table header on the customer's details page, or through the **Share Buy** or **Share Sale** option in the menu bar above the customer's basic information.

#### 3.1.1 Retrieving account information

The share account page is divided into two sections. The **right-hand** side will provide you with a comprehensive list of all transactions on the customer's share account. Clicking the Delete-icon allows authorised users (see 8.5) to delete the respective transaction after entering a security captcha.

Clicking **Export** will generate an XLS file containing the complete history of transactions on this account.



The screenshot shows the mangoO web application interface. The top navigation bar includes links for Start, Customers, Loans, Accounting, Reports, and Settings. Below this is a secondary menu with options like Back, Search, Deposit, Withdrawal, Share Buy (highlighted), Share Sale, New Loan, New Customer, Active Cust., and Inactive Cust. The main content area is titled 'Share Buy for Jean Calvin (003/2006)'. It features a form with fields for Date (10.02.2016), Receipt No., and Number of Shares (1 @ 20,000 UGX). There are 'Buy Shares' and 'Transfer' buttons. To the right, a table titled 'Share Account' displays the transaction history. The table has columns for Date, Amount of Shares, Value of Shares, Receipt No., Authorized by, and Delete. The data shows three transactions and a final balance of 6 shares worth 120,000 UGX.

Date	Amount of Shares	Value of Shares	Receipt No.	Authorized by	Delete
01.10.2015	1	20,000 UGX	0	John Doe	✕
06.05.2015	3	60,000 UGX	1213	John Doe	✕
01.01.2015	2	40,000 UGX	0	admin	✕
<b>Balance:</b>	<b>6</b>	<b>120,000 UGX</b>			

#### 3.1.2 Share Buys

Under **Share Buy**, the left-hand side allows you to add more shares to a customer's account.

The system will assume the current date to be the date of share acquisition. In case the customer bought his additional shares at an earlier date, please adjust the date accordingly. Specifying a

receipt number for the transaction is compulsory. The drop-down field *Number of Shares* allows you to choose the number of shares bought by the customer. The system will automatically calculate the amount due, based on the current price for one share. (The share value can be edited by authorised users only. See 8 for more details.)

### 3.1.3 Transfer of shares

In case a customer wishes to terminate his membership with your financial institution, you may use **Transfer** to transfer shares from another customer **to the currently displayed account**. In order to do that, please choose from the drop-down field the customer who is ending his membership and click **Transfer Shares**. The currently displayed customer will then be credited with all the shares previously owned by the leaving customer. The share account of the leaving customer will be set to zero and his membership will be deactivated.

### 3.1.4 Share Sales

Under **Share Sale**, the customer can sell shares back to the issuing financial institution.

The system will assume the current date to be the date of share sale. In case the customer sold his shares at an earlier date, please adjust the date accordingly. Specifying a receipt number for the transaction is compulsory. The drop-down field *Number of Shares* allows you to choose the number of shares sold by the customer. The system will automatically calculate the value, based on the current price for one share. (The share value can be edited by authorised users only. See 8 for more details.)

## 3.2 Savings Account

You may access a customer's savings account by either clicking *Savings Account* in the table header on the customer's details page, or through either the *Deposit* or the *Withdrawal* option in the menu bar above the customer's basic information.

### 3.2.1 Retrieving account information

The savings account page is divided into two sections. The **right-hand** side will provide you with a comprehensive list of all transactions on the customer's savings account. Clicking the Delete-icon allows authorised users (see 8.5) to delete the respective transaction after entering a security captcha.

Clicking **Export** will generate an XLS file containing the complete history of transactions on this savings account.

### 3.2.2 Deposits

Depending on the option you chose, the form on the **left-hand** side allows you to conduct deposits on the customer's savings account. The system will assume the current date to be the date of the transaction. In case the customer deposited at an earlier date, please adjust the date accordingly.

Specifying the amount and a receipt number for the transaction is compulsory.

In case a person other than the account holder deposited money, you may enter the name of the depositor.

If the *Fixed-term Savings* option is enabled (see 8.1.3), you may furthermore enter the date until which the respective deposit is fixed. In order to pay interest on a deposit, change the transaction type to *Savings Interest*. In this case, the amount will be included as an expense in the expense report.

### 3.2.3 Withdrawals

Depending on the option you chose, the form on the **left-hand** side allows you to conduct withdrawals from the customer's savings account. The system will assume the current date to be the date of the transaction. In case the customer withdrew at an earlier date, please adjust the date accordingly. Specifying the amount, a withdrawal slip number, as well as a receipt number for the transaction is compulsory.

The bottom-most check-box allows you to have the withdrawal fee deducted from the savings account. In this case, the charged fee will appear as a separate transaction on the account, showing the same date, receipt, and slip number as the original withdrawal itself.

mangoO will automatically insert the specified withdrawal fee into the incomes record in the accounting section. (The amount of the fee, however, can be changed by authorised users only. See 8.3.3 for more information.)

The screenshot shows the mangoO web application interface. The top navigation bar includes links for Start, Customers, Loans, Accounting, Reports, and Settings. Below this is a secondary navigation bar with links for Back, Search, Deposit, Withdrawal, Share Buy, Share Sale, New Loan, New Customer, Active Cust., and Inactive Cust. The main content area is titled "Deposit for Martin Luther (001/2006)". It contains a form with fields for Date (10.02.2016), Receipt No. (for Deposit), and Amount (UGX). A "Deposit" button is located below the form. To the right of the form is a table titled "Savings Account" with an "Export" button. The table has columns for Date, Transaction Type, Amount, Receipt, W/draw Slip, Authorised by, and Delete. The table contains several rows of transactions, including Withdrawal Fee, Withdrawal, Savings Interest, and Deposit. The total balance is shown as 19,860 UGX.

Date	Transaction Type	Amount	Receipt	W/draw Slip	Authorised by	Delete
26.01.2016	W/drawal Fee	-1,000 UGX	5678	1234	admin	
26.01.2016	Withdrawal	-8,000 UGX	5678	1234	admin	✗
19.01.2016	W/drawal Fee	-1,000 UGX	1281	603	ext-admin	
19.01.2016	Withdrawal	-26,000 UGX	1281	603	ext-admin	✗
31.12.2015	Savings Interest	860 UGX		0	admin	
25.06.2015	Deposit	25,000 UGX	509	0	admin	✗
01.01.2015	Deposit	30,000 UGX	610	0	admin	✗
Balance: 19,860 UGX						

### **3.3 Loans Account**

As the Loans Account is the most complex of all account types, the topic of loans is covered in a separate chapter. Refer to chapter 4 for more information.

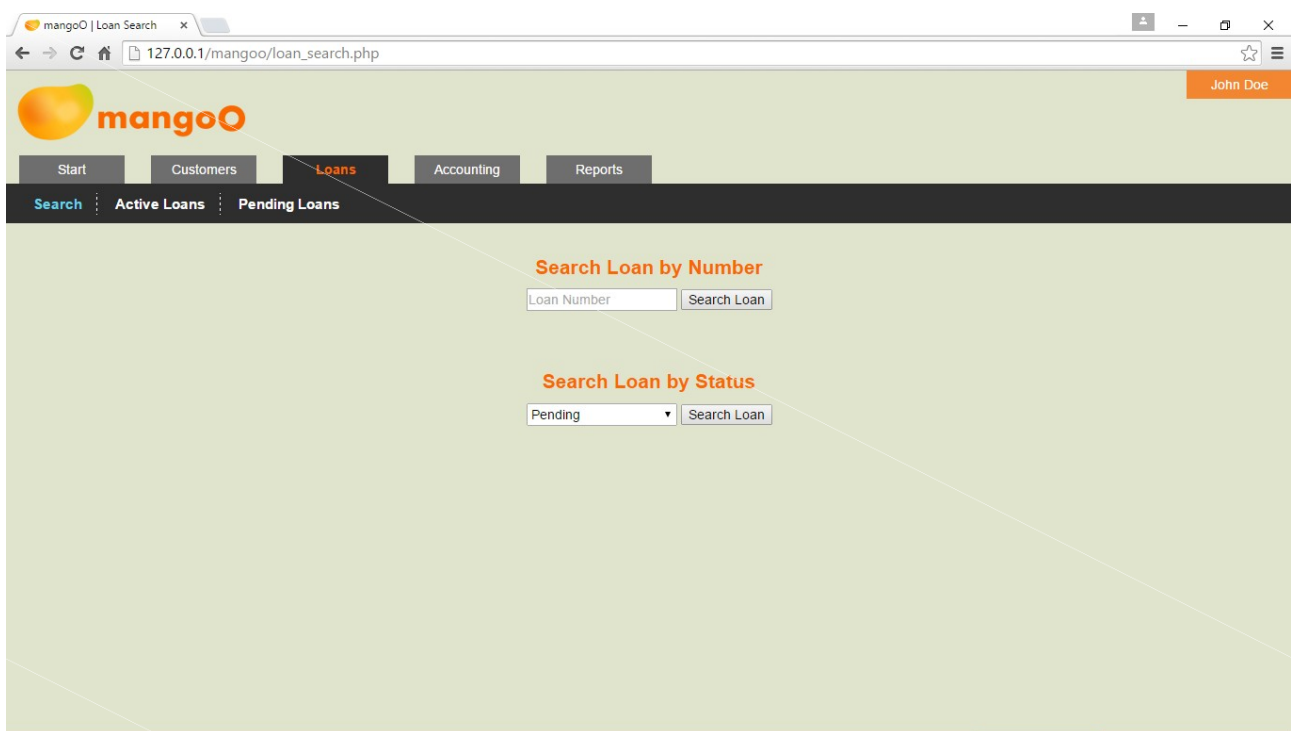
## 4 Loans

There are two ways of accessing a particular loan. One is to retrieve the details of the respective borrower. In the section displaying a customer's accounts, the loans table will show all past and recent loans. You can access the details of a particular loan by clicking on the loan number. (See also 2.4.3.)

Alternatively, you may search for a particular loan number straight away. Selecting the *Loans* tabs will take you to a search form for loans.

### 4.1 Loan Search

The upper input field is used to search for loans **by number**. Enter the loan number (or part of it) into the input field and click **Search**. The search result list will show all loans whose numbers match with the specified search term. You may access a particular record by clicking on the respective loan number. If a given number does not exist in the database, the search result list will be empty.



The screenshot shows a web browser window with the URL `127.0.0.1/mangoo/loan_search.php`. The page features the mangoO logo and a navigation bar with tabs: Start, Customers, Loans (selected), Accounting, and Reports. Below the navigation bar, there are sub-tabs: Search, Active Loans, and Pending Loans. The main content area contains two search sections. The first section, titled "Search Loan by Number", has a text input field labeled "Loan Number" and a "Search Loan" button. The second section, titled "Search Loan by Status", has a dropdown menu with "Pending" selected and a "Search Loan" button.

The lower input field allows for **searches by status**. Select a particular status from the list and click **Search**. The mangoO system will provide you with a search result list including all loans that have the respective status. You may access a particular record by clicking on the respective loan number.

## 4.2 Predefined Lists for Loans

In addition, mangoO offers two predefined lists of loans by status.

### 4.2.1 List of Active Loans

The short link *Active Loans* will show a list of all loans whose status is currently set to *active*. You may access a particular record by clicking on the respective loan number.

Clicking **Export** will generate an XLS file which can then be altered, printed, sent, or otherwise used outside mangoO.

### 4.2.2 List of Pending Loans

The short link *Pending Loans* will show a list of all loans whose status is currently set to *pending*. You may access a particular record by clicking on the respective loan number.

Clicking **Export** will generate an XLS file which can then be altered, printed, sent, or otherwise used outside mangoO.

## 4.3 Loan Details Page

After accessing a particular loan, either through searching or through the account of the borrowing customer, mangoO will provide you with a comprehensive overview of all details concerning the respective loan.

### 4.3.1 Basic Loan Data

The left-hand section of the page presents all basic data about the loan. Apart from the status, none of this information can be changed manually.

#### 4.3.1.1 Security Documents

In case a document or photograph was attached to one or both securities while entering the loan (see 4.4), the respective securities are followed by an eye symbol. Attached files can be accessed by clicking on the respective security.

If no document has been attached, securities are followed by an upload symbol. To later attach a relevant document, click on the respective security (see 4.4.1).

The screenshot shows the mangoO web application interface. The top navigation bar includes 'Start', 'Customers', 'Loans' (highlighted), 'Accounting', and 'Reports'. Below this is a sub-navigation bar with 'Back', 'Search', 'Active Loans', and 'Pending Loans'. The main content area is titled 'Loan No. L-49-1'. It contains a form with the following fields:

- Customer: Lavenia Byler
- Purpose: test
- Principal: 1,250,000 UGX
- Period: 13
- Interest: 2.5% per Month
- Loan Fee: 12,500 UGX
- Monthly Rate: 127,404 UGX
- Repay Total: 1,656,250 UGX
- Secur. 1: Plot
- Secur. 2: Cow
- Guarant. 1: 56 Shanae Bello
- Guarant. 2: 86 Val Cauley
- Guarant. 3: 96 Clotide Fuqua
- Application Date: 19.08.2015
- Issued on: DD.MM.YYYY
- Status: Pending (dropdown menu)

At the bottom of the form is an 'Update Status' button. To the right of the form is a table titled 'Loan Payment Transactions'.

Date due	Date paid	Princ. due	Princ. paid	Inter. due	Inter. paid	Receipt	Fined	Updated
Total:		0	0	0	0			
Remaining:		0		0				

Below the table are two buttons: 'Delete Last Transaction' and 'Export Statement'.

After entering a new loan (see 4.4) into the system, mangoO will automatically have set the status of that loan to *Pending*. Such a loan is registered because it was applied for by one of the institution's customers. However, a pending loan has not yet been approved, let alone issued.

#### 4.3.1.2 Rejecting a Pending Loan

On pending loans, the only option is to update the status of that loan. In case a loan application has been **rejected**, the loan status must be set to *Refused* and **Update Status** must be clicked. Please note that even rejected loans will remain on the system for later reference.

#### 4.3.1.3 Approving a Pending Loan

In case a loan application has been **approved**, the loan status must be set to *Approved*. The date of issuing must be specified in the DD.MM.YYYY format.

The system assumes that the approved principal will be equal to the applied principal amount. In order to disburse an amount different from the original applied principal, adjust the amount in the *Principal approved* field.

On clicking **Update Status**, the system will prompt you to specify the receipt number for the loan fee (and any additional fee you might have specified. See 8.3.4).

When a loan is approved, mangoO will generate a list of expected loan repayment transactions on the right-hand side of the page (see 4.3.2). Please note that due dates are calculated based on the date of issuing and that 31 days are allowed between payment dates.

## 4.3.2 Loan Payment Transactions Data

The screenshot displays the mangoO web application interface. The top navigation bar includes 'Start', 'Customers', 'Loans', 'Accounting', and 'Reports'. Below this, a sub-navigation bar shows 'Back', 'Search', 'Active Loans', and 'Pending Loans'. The main content area is titled 'Loan No. L 100-2'. On the left, there are input fields for loan details: Customer (Sherly Boudreau), Purpose (test), Principal (850,000 UGX), Period (6), Interest (2.5% per Month), Loan Fee (8,500 UGX), Monthly Rate (162,917 UGX), Repay Total (977,500 UGX), Secur. 1 (test), Secur. 2, Guarant. 1 (1 Martin Luther), Guarant. 2 (2 Jan Hus), Guarant. 3 (3 Jean Calvin), Application Date (19.08.2015), Issued on (19.08.2015), and Status (Approved). An 'Update Status' button is at the bottom of this section. On the right, a table titled 'Loan Payment Transactions' shows a list of payments. The table has columns: Date due, Date paid, Princ. due, Princ. paid, Inter. due, Inter. paid, Receipt, Fined, and Updated. The data rows show payments from 19.09.2015 to 20.02.2016, with a total of 850,000 UGX principal due and 118,750 UGX principal paid. A 'Delete Last Transaction' button is below the table. At the bottom right, there are input fields for 'Date Paid' (21.10.2015), 'Amount Paid' (UGX), 'Receipt No.' (for Loan Repayment), and a checkbox for 'deduct from Savings'. A 'Make Repayment' button is at the bottom.

Date due	Date paid	Princ. due	Princ. paid	Inter. due	Inter. paid	Receipt	Fined	Updated
19.09.2015	20.09.2015	141,665	118,750	21,250	21,250	1234	<input type="checkbox"/>	John Doe
20.10.2015		141,667		21,250			<input type="checkbox"/>	admin
19.11.2015		141,667		21,250			<input type="checkbox"/>	admin
20.12.2015		141,667		21,250			<input type="checkbox"/>	admin
20.01.2016		141,667		21,250			<input type="checkbox"/>	admin
20.02.2016		141,667		21,250			<input type="checkbox"/>	admin
<b>Total:</b>		<b>850,000</b>	<b>118,750</b>	<b>127,500</b>	<b>21,250</b>			
Remaining:		731,250		106,250				

The right-hand section of the page presents data about loan payment transactions. While a loan is still pending, this section will be empty. On approval, the system will automatically have generated a list of expected loan repayment transactions (see 4.3.1.3). Please note that due dates are calculated based on the date of issuing and that 31 days are allowed between payment dates.

### 4.3.2.1 Making a Repayment

In case of a repayment, please enter the **date** (by default the current date is assumed), the **receipt number**, and the **total amount paid** by the customer. Please also indicate whether the amount should be deducted from the customer's savings account.

The system will automatically divide the amount paid based on the idea, that the due interest for the month is always served first. This results in the following rules:

- In case the customers brings less than the due interest, the entire amount will be used to cover interest only.
- In case the customer brings more than the due interest but less than the total expected monthly rate (interest plus principal), interest will be cleared first and the remaining amount will be used on principal.
- In case the customers brings more than the total expected monthly rate, any excess money will be used to clear principal.
- In case a customer brings more than the total outstanding balance on both interest and principal, both positions will be cleared and excess money will be deposited on the customer's savings account.

Any payment of interest will reflect on the incomes side in the accounting section (see 6.2).



#### 4.3.2.2 Error Correction

The mangoO system allows the user to revert loan payment transactions. Clicking the delete-icon allows authorised users (see 8.5) to delete the respective transaction after entering a security captcha. This is a safety feature to assure the wilful execution of the delete command.

#### 4.3.2.3 Defaulted Payments and Default Fines

In the Loan Payment Transactions list, due dates which lie in the past and have not been met, are indicated in red. In this case, the system will show a blue box below the payment section which allows you to charge a default fine. To do so, please enter the **date** (by default the current date is assumed), the **receipt number**, and the **total amount charged as fine**. You must also indicate whether the amount should be deducted from the **customer's savings account**. Kindly note that this is the **default setting**!

mangoO | Loan Details x

< > ↺ 🏠 127.0.0.1/mangoo/loan.php?lid=154 ☆ ☰

Interest:  Loan Fee:

Monthly Rate:  Repay Total:

Secur. 1: Sales Agreement for Plot Secur. 2:

Guarant 1:  Guarant 2:

Guarant 3:  Application Date:

Issued on:  Status:

13.08.2015		83,333		25,000			<input type="checkbox"/>	admin
13.09.2015		83,333		25,000			<input type="checkbox"/>	admin
14.10.2015		83,333		25,000			<input type="checkbox"/>	admin
14.11.2015		83,333		25,000			<input type="checkbox"/>	admin
15.12.2015		83,333		25,000			<input type="checkbox"/>	admin
15.01.2016		83,333		25,000			<input type="checkbox"/>	admin
15.02.2016		83,333		25,000			<input type="checkbox"/>	admin
Total:		833,330	0	250,000	0			
Remaining:		833,330		250,000				

Date Paid:  Amount Paid:

Receipt No:  ☐ deduct from Savings

Date Paid:  Amount fined:

Receipt No:  ☒ deduct from Savings

Any payment of a default fine will reflect on the incomes side in the accounting section (see 6.2). Please be aware that mangoO will always assume a default fine to apply to **all outstanding transactions**. Therefore, all currently defaulted payments will be marked as **Fined**.

#### 4.3.2.4 Export Loan Statement

Clicking **Export** will generate an XLS file containing the complete history of transactions on this particular loan.

#### 4.4 Entering a New Loan

In order to enter a new loan application, you first have to open the dataset of the customer (see 2.1)

who wishes to apply for the loan. Provided the customer's membership status is **Active**, you will find an option in the upper menu bar called **New Loan**. Clicking it will allow you to fill a new loan application for that customer.

The screenshot shows a web browser window with the URL `127.0.0.1/mangoo/loan_new.php?cust=3`. The page title is "mangoO | New Loan". The mangoO logo is in the top left. The top navigation bar includes "Start", "Customers", "Loans", "Accounting", "Reports", and "Settings". The "Customers" menu is expanded, showing "Back", "Search", "Deposit", "Withdrawal", "Share Buy", "New Loan" (highlighted), "New Customer", "Active Cust.", and "Inactive Cust.". The main content area is titled "New Loan Application for Jean Calvin (003/2006)". The form contains the following fields:

Principal:	<input type="text" value="Loan Sum in UGX"/>	Period:	<input type="text" value="Number of Months"/>
Interest Rate:	<input type="text" value="4"/>	Purpose:	<input type="text" value="Purpose for the Loan"/>
Security 1:	<input type="text" value="First Security"/>	Security 2:	<input type="text" value="Second Security"/>
Guarantor 1:	<input type="text"/>	Guarantor 2:	<input type="text"/>
Guarantor 3:	<input type="text"/>		
Monthly Rate:	<input type="text"/>		
Repay Total:	<input type="text"/>	Loan Fee:	<input type="text"/>
Date of Applic.:	<input type="text" value="10.02.2016"/>	Receipt No:	<input type="text" value="for Loan Appl. Fee"/>

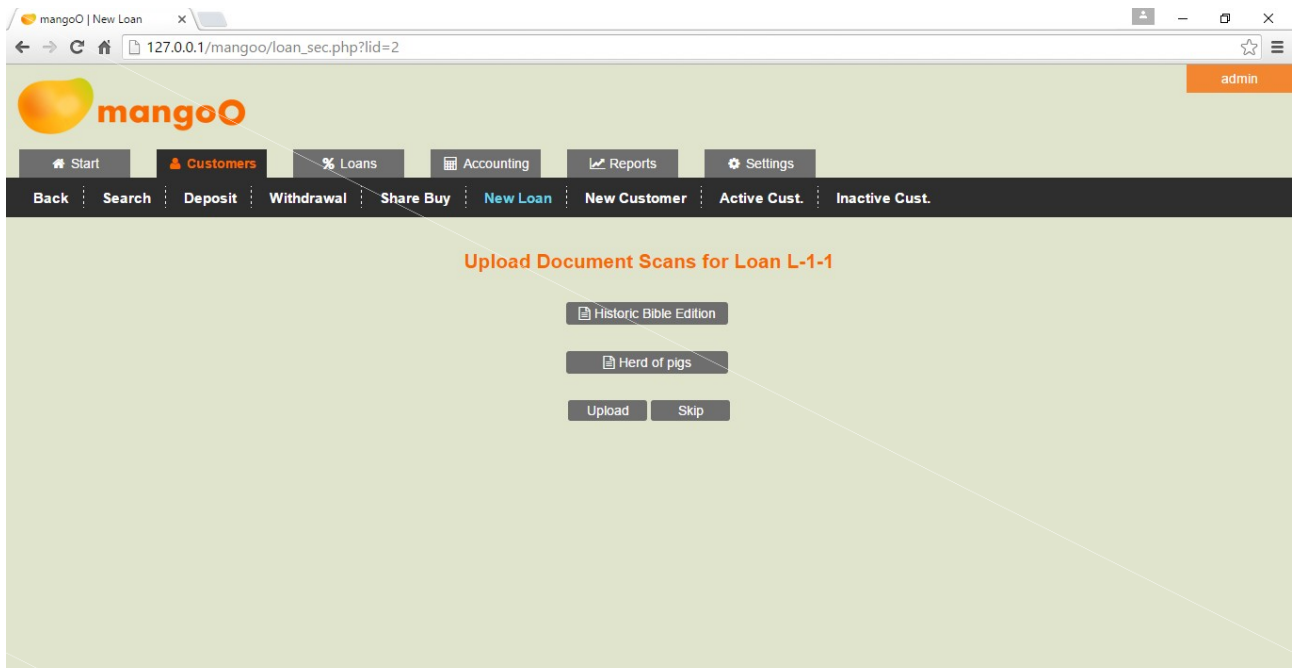
In order to enter a new loan application in the system, fill all compulsory fields. As soon as the information on principal, loan period, and interest rate is entered, mangoO will calculate the monthly repayment rate, the total repay amount, and the applicable loan fee.

By definition, guarantors can only be active members of the institution and must be selected from the lists.

On completion, please click **Continue**.

#### 4.4.1 Uploading Security Documents

The next page allows you to upload documents that further describe the specified securities. Depending on the number of securities, mangoO will offer you one or two option for uploading. You may want to attach photos, scans, or other documents related to the securities. Those documents will later be accessible through the loan's details page (see 4.3.1).



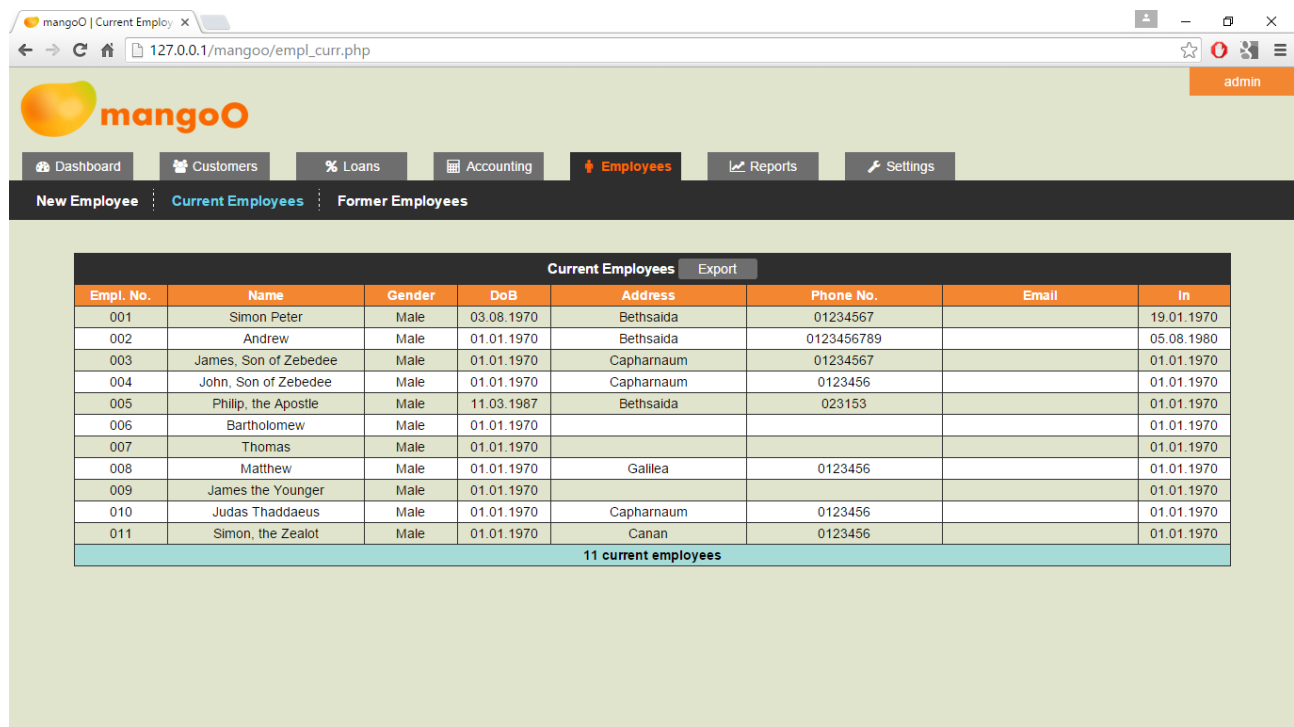
In order to attach any document to a security, click **Choose File**, navigate to the location of the file on your computer, and select it for upload. The system will only allow you to choose PDF, JPG, JPEG, PNG, TIF, TIFF, DOC, DOCX, XLS, XLSX, ODT, ODS and TXT files.

Clicking **Upload** will upload all selected files to mangoO.

Should you not wish to attach documents to any of the securities, click **Skip**.

## 5 Employees

This part of mangoO allows to manage all employees of the microfinance institution. Clicking **Employees** takes you to a list of all currently employed workers.



Current Employees							
Empl. No.	Name	Gender	DoB	Address	Phone No.	Email	In
001	Simon Peter	Male	03.08.1970	Bethsaida	01234567		19.01.1970
002	Andrew	Male	01.01.1970	Bethsaida	0123456789		05.08.1980
003	James, Son of Zebedee	Male	01.01.1970	Capharnaum	01234567		01.01.1970
004	John, Son of Zebedee	Male	01.01.1970	Capharnaum	0123456		01.01.1970
005	Philip, the Apostle	Male	11.03.1987	Bethsaida	023153		01.01.1970
006	Bartholomew	Male	01.01.1970				01.01.1970
007	Thomas	Male	01.01.1970				01.01.1970
008	Matthew	Male	01.01.1970	Galilea	0123456		01.01.1970
009	James the Younger	Male	01.01.1970				01.01.1970
010	Judas Thaddaeus	Male	01.01.1970	Capharnaum	0123456		01.01.1970
011	Simon, the Zealot	Male	01.01.1970	Canan	0123456		01.01.1970
11 current employees							

The table lists all workers who have either no end date set or the specified end date still lies in the future.

On clicking **Former Employees**, the system will generate a list of all employees, whose end of employment date lies in the past.

### 5.1 Employee Details Page

On both lists, you may select any employee by clicking the employee number. This will take you the respective employee's details page. Here you may alter the employee's personal details, such as number, names, contact details, salary, and others.

#### 5.1.1 Employee Picture

In order to upload a new picture of an employee, click the existing picture or the place-holder.

#### 5.1.2 Linking Employee and mangoO System User

The button **User** will take you to the user settings page (see 8.4.4). If the respective employee was already linked to a mangoO system user, that user will be loaded into the edit fields. Otherwise, you may create a new user and link the employee to this new user record.

**mangoO**

Dashboard Customers Loans Accounting **Employees** Reports Settings

New Employee Current Employees Former Employees Users

**Simon Peter (001)**

Empl. No: 001 Address: Bethsaida

Name: Simon Peter Phone No: 01234567

Gender: Male E-Mail: abc@xyz.com

DoB: 03.08.1970 Employ. Start: 19.01.1970

Marital Status: Married Employ. End: DD.MM.YYYY

Last updated: 09.03.2016 Salary: 500000 Username: admin

Save Changes

## 5.2 New Employee Record

In order to create a new employee record, simply click **New Employee**. The following form will allow to enter all details of the new worker.

**mangoO**

Dashboard Customers Loans Accounting **Employees** Reports Settings

New Employee Current Employees Former Employees

**New Employee**

Number: Monthly Salary: JGX

Name: Full Name Address: Place of Residence

Gender: Male Phone No:

DoB: DD.MM.YYYY E-Mail: abc@xyz.com

Marital Status: Single Employ. Start: 15.03.2016

Continue

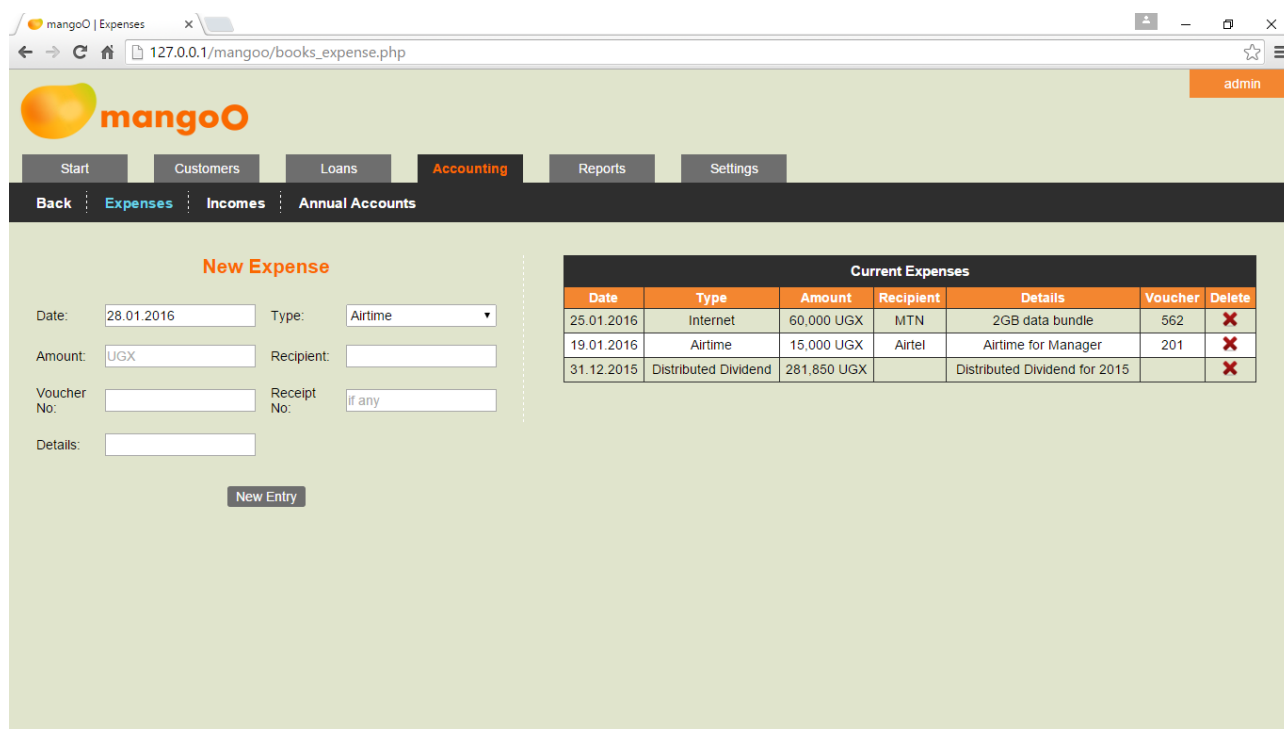
On clicking **Continue**, the new record will be written to the database. In a next step, mangoO will allow you to upload a picture of the respective employee. Permissive file formats are JPG, JPEG, PNG, TIF, and TIFF. In case you do not wish to upload a picture, choose **Skip**.

## 6 Accounting

mangoO Microfinance Management can also be used for internal accounting purposes. Under **Accounting** you will find three options **Expenses**, **Incomes** and **Annual Accounts**.

### 6.1 Expenses

Use this option to record all expenses of your micro-finance institution.



The screenshot displays the mangoO web interface for recording expenses. The top navigation bar includes 'Start', 'Customers', 'Loans', 'Accounting' (selected), 'Reports', and 'Settings'. Below this, a sub-navigation bar shows 'Back', 'Expenses' (selected), 'Incomes', and 'Annual Accounts'. The main content area is divided into two sections:

**New Expense**

Form fields for recording a new expense:

- Date: 28.01.2016
- Type: Airtime (dropdown menu)
- Amount: UGX
- Recipient: (text input)
- Voucher No.: (text input)
- Receipt No.: if any (text input)
- Details: (text input)

A 'New Entry' button is located below the form fields.

**Current Expenses**

Date	Type	Amount	Recipient	Details	Voucher	Delete
25.01.2016	Internet	60,000 UGX	MTN	2GB data bundle	562	✖
19.01.2016	Airtime	15,000 UGX	Airtel	Airtime for Manager	201	✖
31.12.2015	Distributed Dividend	281,850 UGX		Distributed Dividend for 2015		✖

In order to record a new expense, enter all necessary information. Amount, recipient and payment voucher number are compulsory to include. Make sure to also choose an appropriate expenditure type from the list. (Expenditure types can be edited or amended by system administrators only.)

In order to enter the information into the system, click **New Entry**.

On the right-hand side, mangoO shows a list of all expenditures for past 60 days. Any further representation of accounting data is limited to the Reports section (see 7).

Clicking the delete-icon allows authorised users (see 8.5) to delete the respective transaction after entering a security captcha.

### 6.2 Incomes

**WARNING:** Under normal circumstances, this option is rarely ever needed! The mangoO system is designed to record all incomes automatically whenever they are generated from the institution's business. This means that payable fees, payments of interest, and other forms of

income are captured automatically as they happen. However, instances might occur in which the manual recording of an income is inevitable. In this case, use this option to record such an income. Make sure this remains an exceptional incident!

In order to manually record a new income, enter all necessary information. Amount and receipt number are compulsory to include. Make sure to also choose an appropriate income type from the list. (Please note that income types can be edited or amended by system administrators only.)

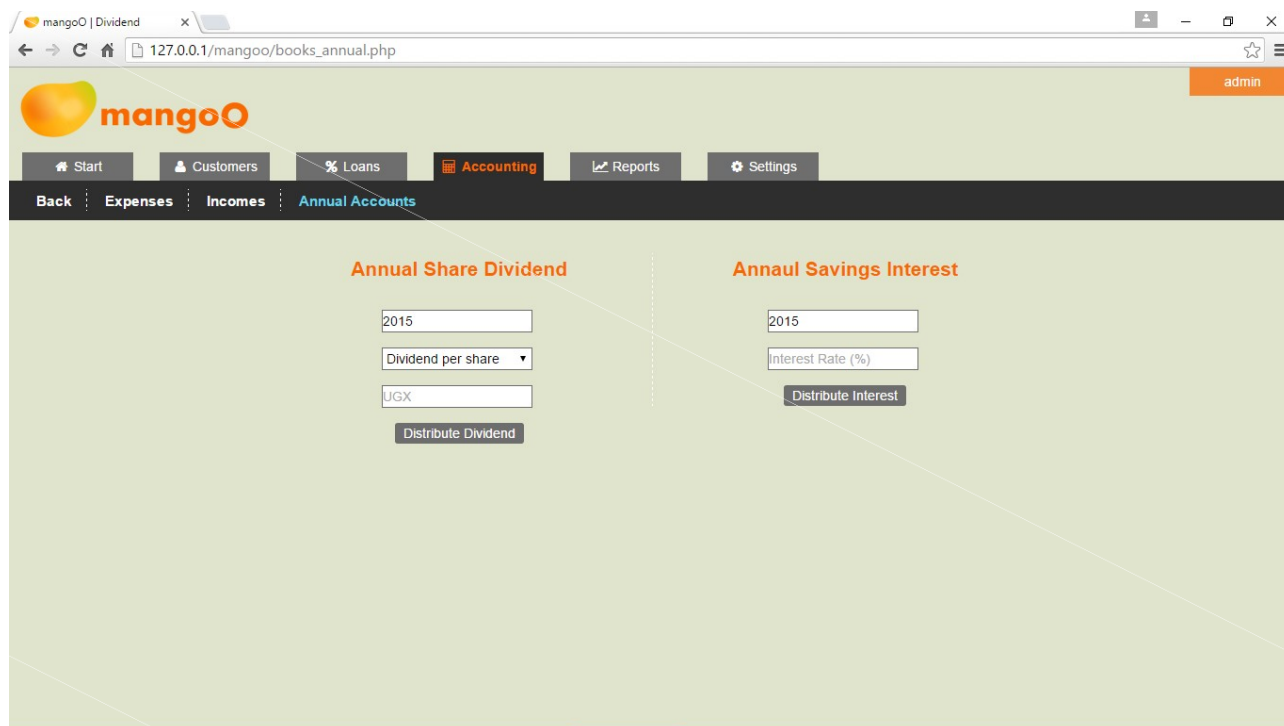
In order to enter the information into the system, click **New Entry**.

On the right-hand side, mangoO shows a list of all incomes of the past 60 days. Further representation of accounting data is limited to the Reports section (see 7).

Clicking the delete-icon allows authorised users (see 8.5) to delete the respective transaction after entering a security captcha. Not all income types can be deleted from this list. Some, like Withdrawal fees, must be deleted by deleting the transaction that triggered this income.

## 6.3 Annual Accounts

This option is used to close a financial year and payout an annual share dividend and an annual savings interest to customers.



### 6.3.1 Annual Share Dividend

You may either enter a dividend per share or the grant total amount of your annual dividend.

In either case, mangoO calculates the proportion of dividend to which a customer is entitled based

on the length of time the customer was holding his / her shares during the given year.

If the dividend was given on a *per share* basis, mangoO will credit every customer's savings account with a proportionate amount.

If the specified dividend was grand total, mangoO will first divide this amount by the number of eligible shares to calculate the dividend per share. Then, all eligible savings accounts will be credited with a proportionate amount. Please note that due to rounding differences the distributed total might not entirely add up to exactly match the initially entered grand total amount.

### **6.3.2 Annual Savings Interest**

To distribute the annual savings interest to your customers, enter the respective year and interest rate as percentage.

mangoO calculates the amount of interest to which a customer is entitled based on his / her average savings balance for the given year.

Please note that only active customers are granted interest.



## 7 Reports

Reporting is used to evaluate the institution's business activities. As this would typically be the work of management staff only, access to these reports is restricted to certain user accounts.

mangoO offers four different types of individual reports (Income Report, Expense Report, Loans Report, and Capital Report) plus two summarizing report types (Monthly and Annual Report). In order to generate a report, choose a type, select a time period and the desired format in the light-blue menu bar, and click **Select Report**.

mangoO | Loans Report x

127.0.0.1/mangoO/rep\_loans.php

admin

Start Customers Loans Accounting **Reports** Settings

Incomes Report Expenditures Report **Loans Report** Capital Report Monthly Report Annual Report

2015 September Select Report

Export Report

Due Loan Payments for 09/2015			
Loan No.	Loan Status	Due Date	Due Amount
L 182-1	Approved	13.09.2015	108,333 UGX
L 100-2	Approved	19.09.2015	162,915 UGX
L 200-1	Approved	30.09.2015	133,200 UGX
Total Due Payments: 404,448 UGX			

Loan Recoveries for 09/2015			
Loan No.	Instalment Due	Recovered	Date
L 100-2	162,915 UGX	140,000 UGX	20.09.2015
L 200-1	133,200 UGX	15,000 UGX	29.09.2015
Total Recoveries: 155,000 UGX Loan Recovery Rate: 38%			

Loans Out for 09/2015						
Loan No.	Customer	Principal	Interest	Period	Renav Total	Date Out

By default, mangoO offers to generate reports for the previous month of the current year.

Clicking **Export** above the list will generate an XLS file which can then be altered, printed, sent, or otherwise used outside mangoO.

Further types of reports can be programmed by your system administrator or supplier.

## 8 Settings

Please note that access to the system settings page is limited to users with the respective permission.

### 8.1 Basic Settings

The **Basic Settings** page shows several options concerning to system in general.

#### 8.1.1 System-wide settings

Using *Dashboard Left* and *Dashboard Right*, the two halves of the user dashboard on the start page (see 1.1) can be configured.

In case the auto-deactivation of unsubscribed customer accounts is activated (see 8.1.4), the left side of the dashboard will automatically be set to *Overdue Subscriptions*.

In case auto-fining for defaulted loan instalments is activated (see 8.2.5), the right side of the dashboard will automatically be set to *Defaulted Loan Instalments*.

The system-wide *Currency Abbreviation* will be used in tables and input fields across mangoO.

#### 8.1.2 Number Settings

Under *Customer Number Format* a pattern for new customer number must be defined. The following variables are predefined in mangoO:

N	-	Incremental number
D	-	Day of membership begin
M	-	Month of membership begin
Y	-	Year of membership begin

All variables must be preceded by a leading percentage symbol (%).

Apart from the variables, you may also include any other character string. Any string that is preceded by a leading percentage symbol will show in the new customer number. For example, with the *Customer Number Format* setting:

**%Y%-%Cust\_%N**

mangoO will produce the following customer number for the 101<sup>st</sup> customer:

**2016-Cust\_101**

*Employee Number Format* works accordingly for employee numbers. The same variables apply.

#### 8.1.3 Savings Related Settings

Setting a *Minimum Savings Balance* will prevent withdrawals that would reduce a customer's savings account to a balance below the specified amount. Setting this option to zero would allow

customers to entirely empty their savings account.

*Fixed-term Savings Deposits* can be toggled on and off using the buttons. When activated, you can define a fixed term for any savings deposit (see 3.2.2).

### 8.1.4 Auto-Deactivation of Unrenewed Customer Accounts

If the auto-deactivation option for customer accounts is enabled, all customers who have delayed the renewal of their annual subscription will automatically be set to *inactive* after the specified grace period (in months). Leaving this field empty will disable auto-deactivation.

Please note that as long as this feature is enabled, the left side of the dashboard will automatically be set to *Overdue Subscriptions* (see 8.1.1).

## 8.2 Loan Settings

The screenshot shows the mangoO web application interface. The browser address bar displays '127.0.0.1/mangoO/set\_loans.php'. The application has a top navigation bar with the mangoO logo and a user profile 'admin'. Below this is a secondary navigation bar with tabs: Start, Customers, Loans, Accounting, Reports, and Settings. The Settings tab is active, and the 'Loan Settings' sub-tab is selected. The main content area is titled 'Loan Settings' and contains the following configuration fields:

Field	Value
Interest Calculation Method	Floating
Loan Interest Rate (%)	4
Minimum Length of Membership (Months)	4
Minimum Loan Principal	500000
Maximum Loan Principal	10000000
Maximum Principal / Savings Ratio (%)	500
Auto-fine defaulted loan instalments after (Days)	Auto-fining off
Limit of Guarantees	3

A 'Save Changes' button is located at the bottom of the form.

### 8.2.1 Interest Calculation Method

mangoO supports two different methods of loan interest calculation.

The **fixed method** calculates the payable interest per month based on the loan's initial principal amount. This results in a fixed interest amount per month.

The **floating method** calculates the payable interest per month based on the remaining principal balance for the respective loan. This results in a reducing interest amount per month. On each loan payment, the remaining principal and interest is recalculated and updated.

### 8.2.2 Loan Interest Rate

The *Loan Interest Rate* is the percentage charged by default as interest on customer loans. Please note that this default rate can be individually adjusted for every loan application (see 4.4).

### 8.2.3 Minimum Length of Membership

The *Minimum Length of Membership* option specifies the required duration of membership before a customer is eligible to apply for a loan. Leaving the field empty will deactivate this feature.

### 8.2.4 Limits on Loan Principal Amount

The values entered in *Minimum Loan Principal*, *Maximum Loan Principal*, and *Maximum Principal / Savings Ratio* set the limits for any loan application.

*Minimum Loan Principal* and *Maximum Loan Principal* are fixed amounts, while *Maximum Principal / Savings Ratio* must be specified as a percentage. For example, a value of 500% will allow any customer to apply for five times the amount of his current savings balance.

In case both *Maximum Loan Principal* and *Maximum Principal / Savings Ratio* are set, mangoO will use the smaller of the two amounts to limit the loan principal for any customer.

Leaving any of the fields empty will deactivate the corresponding feature.

### 8.2.5 Auto-Fining Loan Defaulters

If the auto-fine option for defaulters is selected (see 1.1), loan default fines will automatically be charged and deducted from the defaulter's savings account after a delay that exceeds the specified grace period (in days). Please note, however, that using this option will allow savings accounts to drop to a balance below zero.

Leaving the field empty will deactivate this feature.

Please also note that as long as this feature is enabled, the right side of the dashboard will automatically be set to *Defaulted Loan Instalments* (see 8.1.1).

### 8.2.6 Limit of Guarantees

Use this option to limit the number of active loans any customer can guarantee for at a time. Leaving the field empty will deactivate this feature.

### 8.2.7 Additional Field for Loans

Here you may specify the name of an extra input field for loans. Use this if you require to record additional information related to loans. Leaving this option empty will deactivate the additional input field for loans.

## 8.3 Fees & Charges

This section allows to adjust all fees and charges charged by your institution. All these fees are

charged automatically by mangoO as they apply.

### **8.3.1 Share Value**

The current *Value of Shares* will be used when customers purchase additional shares. mangoO maintains records of all changes in share values.

### **8.3.2 Membership related Fees**

*Entrance Fee* and *Stationary Sales* are charged when new members join the financial institution.

*Annual Subscription Fee* is charged every 12 months to renew a customer's membership. As this fee is not charged automatically, manual renewal of membership is required for every customer (see 2.4.2). Setting this fee to zero will deactivate all features related to annual subscription.

### **8.3.3 Operational Fees**

*Withdrawal Fee* is charged when customers withdraw money from their savings accounts.

### **8.3.4 Loan related Fees**

*Loan Application Fee*, is charged when a customer applies for a new loan.

*Loan Fee (%)* is charged when a loan is set to 'Approved' for the first time.

*Loan Insurance (%)* is charged when a loan is set to 'Approved' for the first time. Set this fee to '0' if your institution does not charge insurance.

*Loan Default Fine* specifies the amount that will automatically be charged by mangoO if the *Auto-financing* option has been enabled (see 8.2.5).

*Additional Fee on Loans* allows for charging another customised loan related fee. Use this you a require to charge another fee related to loans. Enter the fee's name into the first and the fee's value into the second input field. The fee will be charged on loan disbursement.

## **8.4 Users**

On this page, existing users can be edited as well as new ones added to mangoO.

### **8.4.1 New User Record**

In order to create a new mangoO user, fill the fields on the left-hand side of the page. Remember that each user must be assigned to a user group (see 8.5).

### **8.4.2 Edit Existing User**

In order to edit an existing user, click the Edit-symbol next to the user's record in the right-hand section of the page. Whenever you edit an existing user, make sure to also re-type the password, even when it did not change.

Please note that the primary user cannot be assigned to a user group other than *Administrator*, since

mangoO requires at least one user with administrator rights.

### 8.4.3 Passwords

Passwords need to be at least six characters long.

### 8.4.4 Linking an Employee to a User Account

If the user is also registered as an employee of your institution (see 5), you may link the employee record to the user by selecting a name from the employees' list. Every employee can be linked to exactly one user account. (Also see 5.1.2)

## 8.5 Usergroups

The permissions management of mangoO is based on user groups. On this page, existing usergroups can be edited as well as new ones added to mangoO.

### 8.5.1 New Usergroup

In order to create a new usergroup, fill the fields on the left-hand side of the page. Choose the appropriate permissions for each group by using the checkboxes.

### 8.5.2 Edit Existing Usergroup

In order to edit an existing usergroup, click the Edit-symbol next to the usergroup's record in the right-hand section of the page. Remember that when changing permissions for a usergroup, all users in this group will be hold these new permissions.

### 8.5.3 Deleting Usergroups

To delete a usergroup, click the Delete-symbol next to the usergroup's record. Please note that a usergroup cannot be deleted while it still has members.

### 8.5.4 Administrator Usergroup

Please note that the primary usergroup *Administrator* can neither be changed nor deleted.

## 8.6 Log Records

The list under **Log Records** allows to monitor login and log off activities of all mangoO users. In case a user forgot to log out from the system and his session was forcibly ended, the log-off time will show in red. Such a user will see a logout reminder message the next time he or she logs in to mangoO.