



HPE Living Progress - Women Community Savings Android App Requirements Specification

Application Requirements Specification



Revision History

Author	Revision Number	Date
Gaurav Kheterpal	1.0	09/29/16
Gaurav Kheterpal	1.1	10/19/16

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Application Requirements Specification

1. Scope

Objectives

- Development of MyWORTH Android phone app.
- Development of MyWORTH Android tablet app.
- Integration of the android apps, the backend & the admin tool into one cohesive system.
- Quality assurance + security review & remediation of all issues found.
- Application will be localized in Swahili, in addition to English.

Scope

Please refer to the [Feature Prioritization List](#);

- All items marked as “Must have” are within scope, and will be delivered within the agreed upon delivery date.
- All items marked as “Nice to have” will be considered stretch goals, and will be worked on as time / budget permits.
- All items marked as “Not required”, will also be considered stretch goals, and will be worked on as time / budget permits.



2. General Requirements

2.1 Graphical User Interface Requirements

2.2.1 Main GUI Goal

The MyWORTH application will be user friendly and will be built with Android app development best practices

A UI prototype has already been built for this application.

2.2.2 Supported OS Versions & Devices

The users can access the MyWORTH application by installing on Android phones/ tablets. The minimum supported Android version is Android 4.4. The target test phone device is Samsung Galaxy 2. The target test tablet device is Samsung Tab A.

2.2.3 Supported Orientations

- Unless stated otherwise, all screens are expected to work in both portrait and landscape modes

Performance Constraints

User Metrics Requirements:

- There will be about TBD users utilizing this application. It is expected that there will be about 20K users for the app in first year. This could scale up to 1M+ users in distant future.
- There could be as many as 1000 users using the application concurrently. The number will not be very high when compared to the total number of users due to different timezones and varying group meeting times.

Performance Requirements:

- All screens must respond to user interaction within 1-2 seconds. Any interactions that take longer must show an appropriate indication to the user via a spinner/ progress indicator
- The application should have 24x7 availability and 99.5% uptime.

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2.2 Security

2.2.1 Security Roles

2.2.1.1 Permissions

All security checks will occur against permissions. Each function in the system will validate a user's permission against the required permission for the task.

2.2.1.2 Roles

The app will have 2 types of roles

- User (represents standard user)
- MC (represents management committee user)

Standard User can perform the following functions:

- Login / logout
- Register
- View Dashboard
- View Notifications
- View / Edit Savings Passbook
- View / Edit Loans Passbook
- View / Edit Other Loan Status
- View / Edit Penalties
- Management Committee User can perform the following functions:
 - Login / logout
 - Register
 - View Dashboard
 - View Notifications
 - View / Edit Savings Passbook
 - View / Edit Loans Passbook
 - View / Edit Other Loan Status
 - View / Edit Penalties
 - View / Edit Savings Journal
 - View / Edit Loans Journal
 - View / Edit Group Account Summary
 - View / Edit Group Announcements
 - View / Edit Group Settings.



All operations can only be performed once the user is logged in.

3. Required Documentation

Specification Documentation

- Requirements Specification (this document)
- High Level Use Case Diagrams
- Activity Diagrams
- Logical data model (as needed)
- Quality Assurance Plan (out of scope for this competition)

4. Help / User Documentation

None at this time.

5. Notes

None at this time.

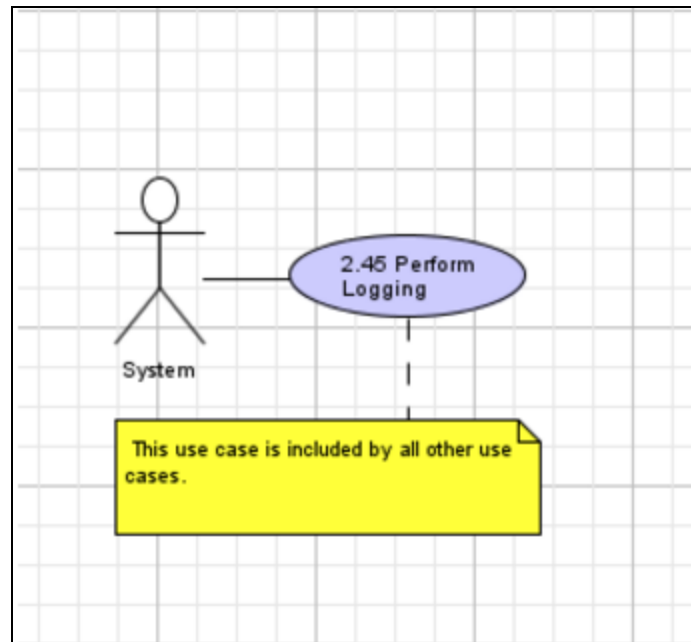
6. Future Enhancements

None at this time.

7. Logic Requirements

7.1 Login & Logout

- 1) It is assumed that the user (both standard user and MC user) needs to login to be able to perform any operation with the app. If the user is not logged in, they will be prompted to enter their credentials. The application must log all activity related to user authentication.

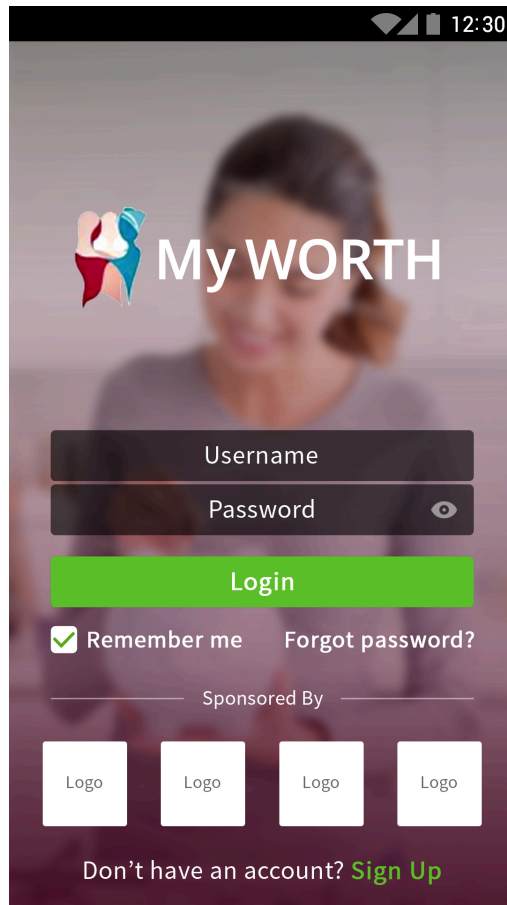


7.1.1 Login [External]

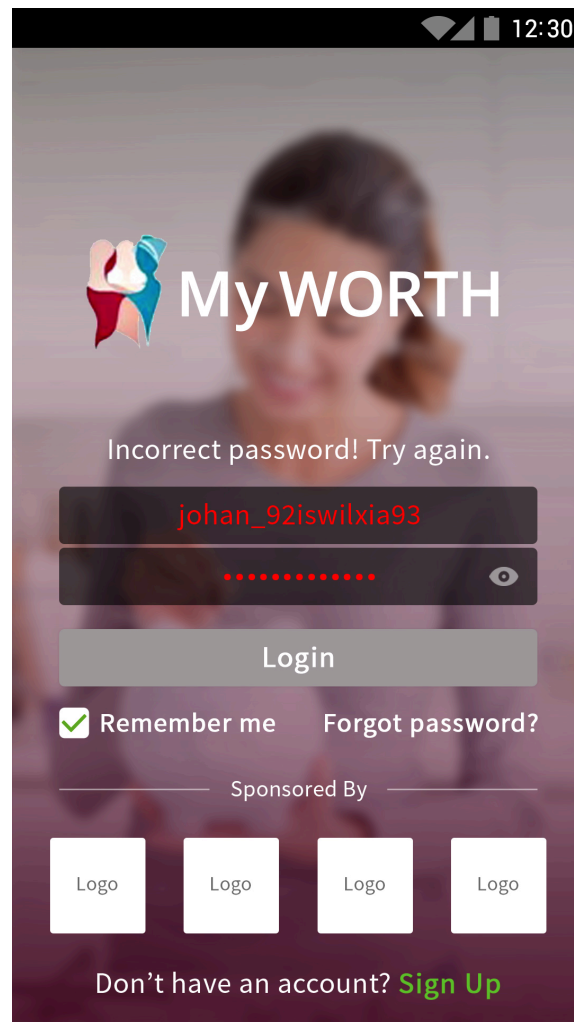
The application will allow users to login by entering their credentials. The application validates user credentials and performs authentication/authorization.

- Pre-conditions: the non logged-in user taps the application icon on their device
 - Post-conditions: the user was successfully logged in, can access application functionality.
- The user will be entering the username and password on login screen. Both username and password are case sensitive.

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- If either username, password or both are invalid, the app will show a message 'Invalid credentials' and prompt the user to try again



7.1.2 Logout [External]

The user can logout at any time from the application to ensure high security. The logout will be performed through the some security system.

- Pre-conditions: the logged in user pressed “Logout” button or the user session has expired.
- Post-conditions: the user was logged out from the application and cannot work with the application until login again.

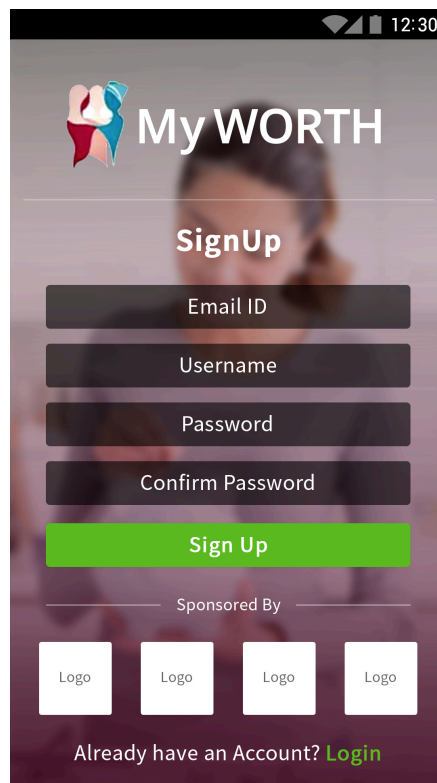
Once logged in, the user can tap the logout button/ link in the app. This will clear any active session and cached data and navigate the user to login screen.



7.2 Sign up

The user should be able to sign up by clicking on the 'Sign up' link on the app home screen and providing the following information

- Name
- Username
- Email
- Country
- Gender (Male/ Female)
- Date of Birth (mm/dd/yy format)
- Password
- Confirm Password
- Upload Profile Picture



TBD - A standard user will be added to a group by a MC user. It is assumed that the MC user receives the handles for the standard users to be added in a group.

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Once the user submits a registration request, they will get a verification email with an activation link for confirmation. Once the user clicks the activation link on the email, it is treated as an 'active' user in context of the app.

7.2 Remember Me

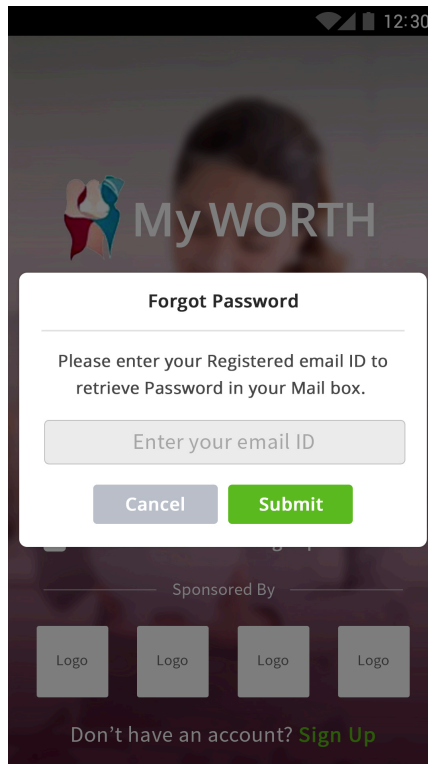
If this box is checked on the login screen, the app should automatically populate the username and password from the local cache. The app should persist the credentials/ access token locally to make sure there's a seamless re-login with the backend.

If this is not checked, the username & password should not be pre-populated when the user logs in.

7.3 Forgot Password

The user should be able to click the 'Forgot Password' button on login screen to retrieve their credentials. Clicking this link should open a modal window prompting the user to provide their email (username).

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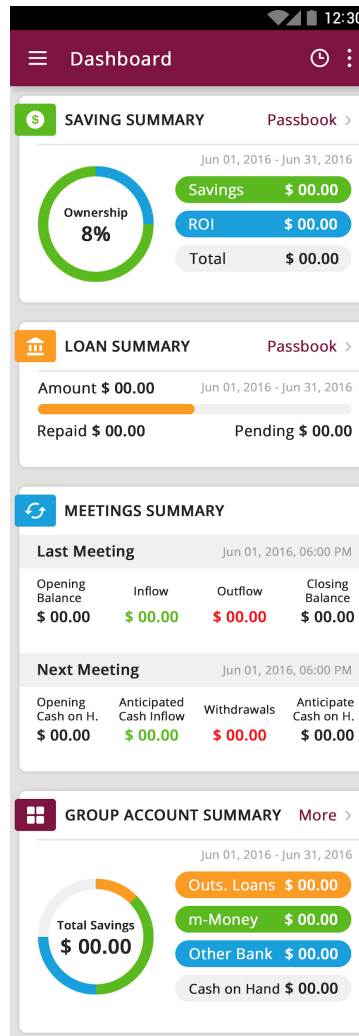
- If the user provides a valid username (email), they should get a link to reset their password
- If the user provides an invalid username (email), the app must show an appropriate error message that the username is not valid.

7.4 Dashboard

Once the user (standard user or MC user) logs in successfully, they are navigated to the Dashboard screen by default. The dashboard screen consists of the following sections

- Savings Summary
- Loan Summary
- Meeting Summary
- Group Account Summary

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7.4.1 Standard User - Savings Summary

The Savings summary section shows the following information

- Chosen time period
- Ownership % represented as a donut chart
- Savings balance¹
- ROI balance

¹ Note that penalties flow into the Savings fund

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- Total (Savings + ROI) balance

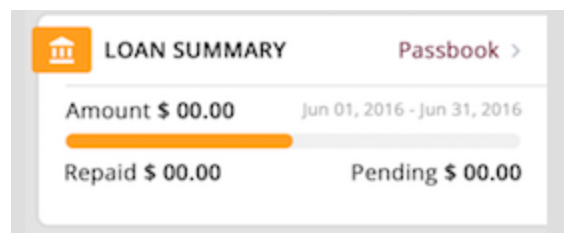


The user can click the Passbook link in the section header to go to Savings screen

7.4.2 Standard User - Loan Summary

The loan summary section shows the following information

- Chosen time period
- Loan Amount
- Repaid Amount
- Pending Amount



The repaid amount and pending amount are shown on a scale so it's intuitive to know how much % of the loan amount has been repaid and how much of it is pending.

The user can click the Passbook link in the section header to go to Loans screen


7.4.3 Standard User - Meeting Summary

The Meetings summary view should be collapsed by default and it shows the following information

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- Sections for Last Meeting & Next Meeting with the following info
 - Meeting Date
 - Opening Balance amount (or cash on hand for next meeting)
 - Inflow amount (anticipated in case of for next meeting)
 - Outflow amount (anticipated in case of next meeting)
 - Closing Balance amount (anticipated in case of next meeting)



MEETINGS SUMMARY

Last Meeting

Jun 01, 2016, 06:00 PM

Opening Balance	Inflow	Outflow	Closing Balance
\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00

Next Meeting

Jun 01, 2016, 06:00 PM

Opening Cash on H.	Anticipated Cash Inflow	Withdrawals	Anticipate Cash on H.
\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00

7.4.4 Standard User - Group Account Summary

The Group Account summary view shows the following information

- Chosen time period
- A donut chart showing how the total savings are distributed among
 - Outstanding Loans
 - m-Money
 - Other Bank Amount
 - Cash on Hand



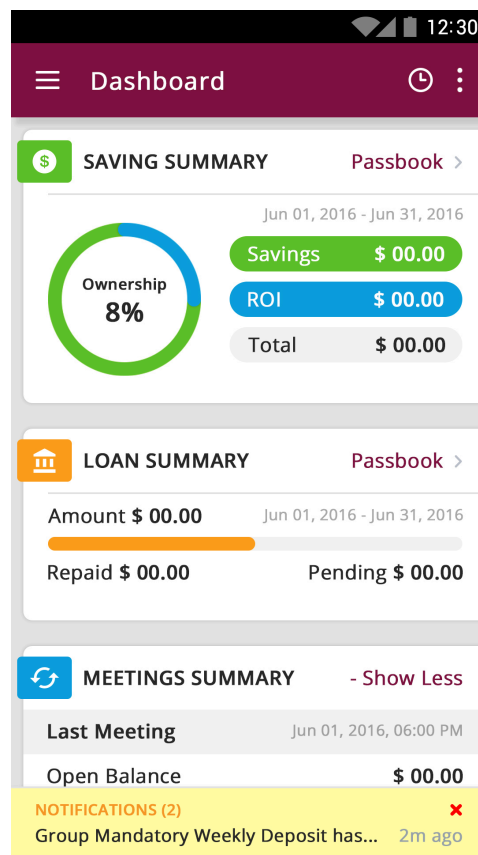
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The user can click the More > link in section header to navigate to the Group Account screen.

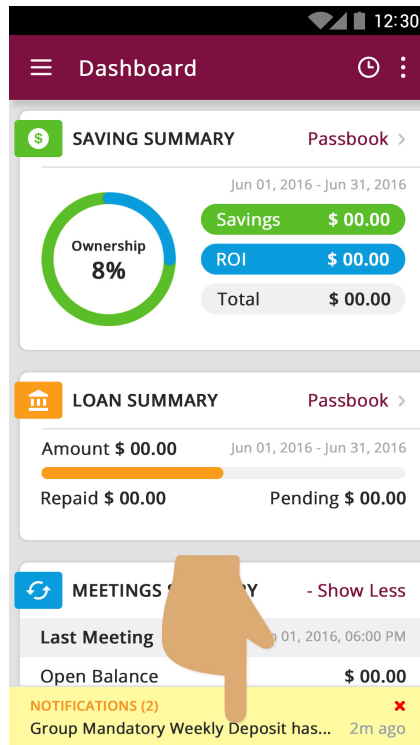
7.5 Standard User - Notifications

The footer section of the app will show important user notifications such as for any deposit/ loan rate changes, late penalties etc.



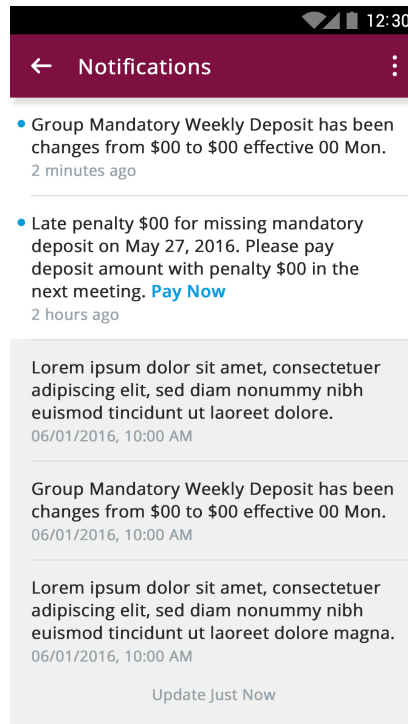
The user can tap on the notification to view the full notification text as well as the whole list of recent notifications.

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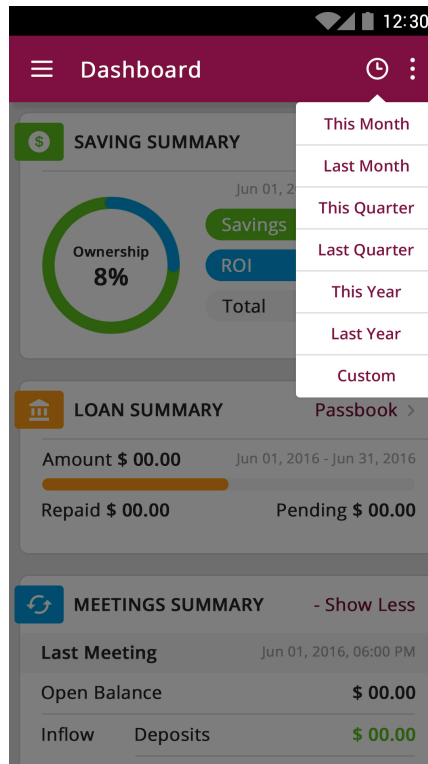
Each notification must have the associated timestamp and a marker indicating whether it's read or unread by the user.

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7.6 Standard User - Time Period Selection

The dashboard screen allows the user to select a duration based on the following options.



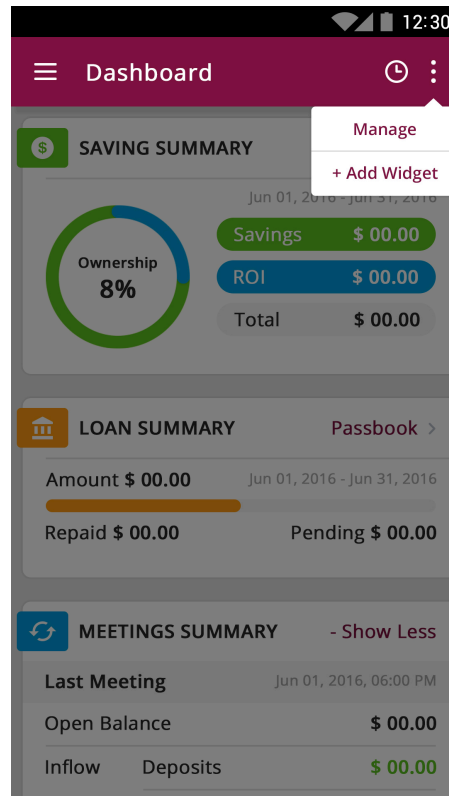
Choosing 'Custom' should allow the user to pick a start and end date. Validations must be put in place to ensure

- Both start and end dates are valid
- start date < end date

7.7 Standard User - Dashboard Widget Management

The app must provide flexibility to add/remove/ re-organised various widgets such as Saving Summary, Loan Summary, Meetings Summary etc.

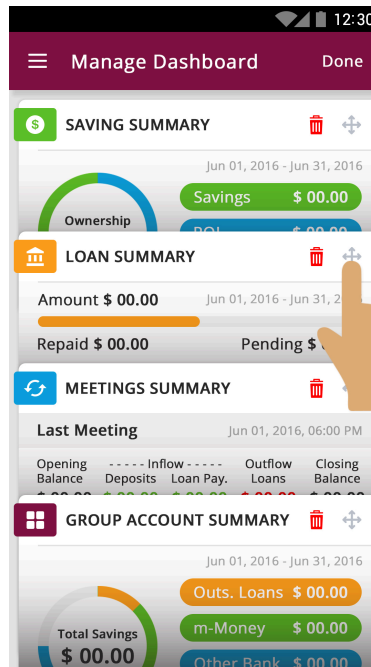
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A user can add a new section by clicking the 'Add Widget' button. To rearrange or delete the existing sections, click 'Manage'.

This will allow the option to drag and drop each section up or down as well as the ability to delete it.

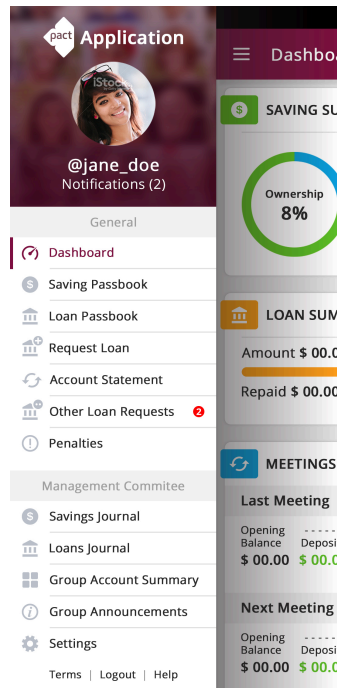
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7.8 Standard User - Navigation Sidebar

The user can click the hamburger menu on top left to open the navigation sidebar which allows 1-tap access to various features provided by the app.

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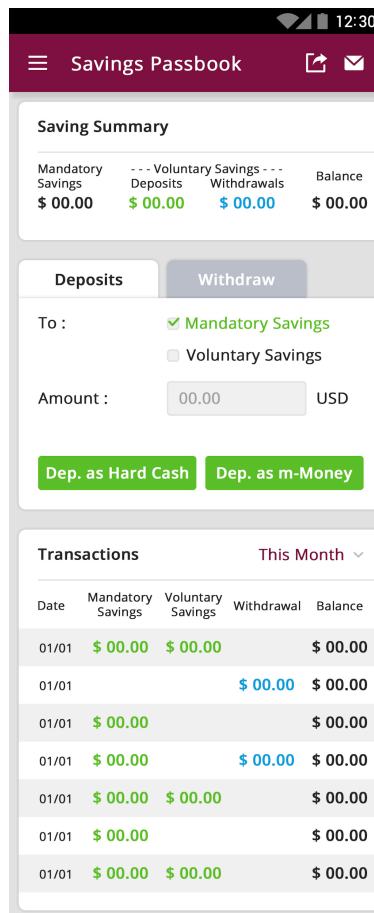
The sidebar shows the following

- User's profile picture (if not configured, show a placeholder user shadow image)
- Username
- Unread notification count
- Dashboard
- Menu options grouped under
 - General
 - Dashboard
 - Saving Passbook
 - Loan Passbook
 - Request Loan
 - Account Statement
 - Other Loan Requests
 - Penalties
 - Management Committee
 - Savings Journal
 - Loans Journal
 - Group Account Summary
 - Group Announcements
 - Settings

7.9 Standard User - Savings Passbook

The Savings passbook contains the details of the user's savings. It includes the following 3 sections

- Savings Summary
- Deposits & Withdrawals
- Transactions



The screenshot shows a mobile app interface for a 'Savings Passbook'. At the top, there's a header bar with a hamburger menu icon, the title 'Savings Passbook', and icons for export and email. Below the header, the 'Saving Summary' section displays a table with columns: Mandatory Savings, Voluntary Savings Deposits, Voluntary Savings Withdrawals, and Balance. All values are \$ 00.00. Below this is a 'Deposits' section with a 'Withdraw' button. The 'To :' field is set to 'Mandatory Savings' (checked) and 'Voluntary Savings' (unchecked). The 'Amount :' field is '00.00' and the currency is 'USD'. There are two buttons: 'Dep. as Hard Cash' and 'Dep. as m-Money'. Below this is a 'Transactions' section with a dropdown for 'This Month'. It contains a table with columns: Date, Mandatory Savings, Voluntary Savings, Withdrawal, and Balance. The table shows several rows of transactions, all with a date of '01/01' and a balance of '\$ 00.00'.

Saving Summary				
Mandatory Savings	Voluntary Savings Deposits	Voluntary Savings Withdrawals	Balance	
\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00	

Transactions - This Month				
Date	Mandatory Savings	Voluntary Savings	Withdrawal	Balance
01/01	\$ 00.00	\$ 00.00		\$ 00.00
01/01			\$ 00.00	\$ 00.00
01/01	\$ 00.00			\$ 00.00
01/01	\$ 00.00		\$ 00.00	\$ 00.00
01/01	\$ 00.00	\$ 00.00		\$ 00.00
01/01	\$ 00.00			\$ 00.00
01/01	\$ 00.00	\$ 00.00		\$ 00.00

The options in the header menu allow the user to

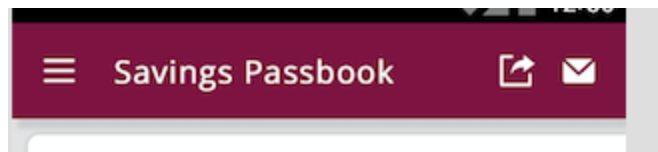
- Export the savings passbook transaction summary as PDF, XLS
- Email the savings passbook transaction summary. It should allow the user to pick the email address, subject and body of the email via an easy to configure template. This option will only be

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accessible for users who've an email configured as part of their profile.

- The email functionality is also applicable to the Journals-for Savings and Loans- for MC email of the same
- The email functionality for Users is applicable not only to Savings Passbook but also to Loan Passbook too.



7.9.1 Standard User - Savings Summary

The Savings Summary section shows the following information

- Mandatory Savings
- Voluntary Savings
 - Deposits
 - Withdrawals
- Balance

A screenshot of the 'Savings Summary' table within the 'Savings Passbook' header. The table has four columns: 'Mandatory Savings', '--- Voluntary Savings --- Deposits', '--- Withdrawals', and 'Balance'. The values are all '\$ 00.00'. The 'Deposits' value is green, and the 'Withdrawals' value is blue.

Mandatory Savings	--- Voluntary Savings --- Deposits	--- Withdrawals	Balance
\$ 00.00	\$ 00.00	\$ 00.00	\$ 00.00

7.9.2 Standard User - Deposits

The Deposits section shows the following information

- Amount to be deposited
- Whether the amount is Mandatory Savings or Voluntary Savings
- Whether the amount is being deposited as hard cash or m-Money

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A screenshot of a web form for deposits. It has two tabs: 'Deposits' (active) and 'Withdraw'. Under 'Deposits', there is a 'To :' field with two radio button options: 'Mandatory Savings' (selected with a green checkmark) and 'Voluntary Savings'. Below this is an 'Amount :' field with a text input showing '00.00' and a 'USD' label. At the bottom are two green buttons: 'Dep. as Hard Cash' and 'Dep. as m-Money'.

Once the transaction is complete, a confirmation message must be shown to the user at the bottom of the screen (as shown below).

A screenshot of a transaction notification message. It shows a header 'Transactions' and a dropdown menu set to 'This Month'. Below this is a yellow notification box with the title 'Transaction Notification!' and a red 'X' icon. The text inside the box reads: 'To complete your DEPOSIT, please handover \$XX to the Treasurer'.

In case of withdrawal transaction, the confirmation message text is “To complete your PENALTY PAYMENT, please handover \$XX to the Treasurer”

7.9.3 Standard User - Withdrawals

The Withdrawals section shows the following information

- Amount to be withdrawn
- Whether the amount is Mandatory Savings or Voluntary Savings
- Whether the amount is being withdrawn as hard cash or m-Money

A screenshot of a web application's withdrawal interface. It features two tabs: 'Deposits' (inactive) and 'Withdraw' (active). The 'Withdraw' tab contains a 'From :' section with two radio buttons: 'Mandatory Savings' (selected) and 'Voluntary Savings'. Below this is an 'Amount :' section with a text input field containing '00.00', a 'USD' label, and a smaller 'Available \$ 00.00' label. At the bottom, there are two blue buttons: 'W/D as Hard Cash' and 'W/D as m-Money'.

Once the transaction is complete, the transaction (withdraw) will be confirmed similarly to that above.

7.9.4 Standard User - Transactions

The Transactions section shows the following information

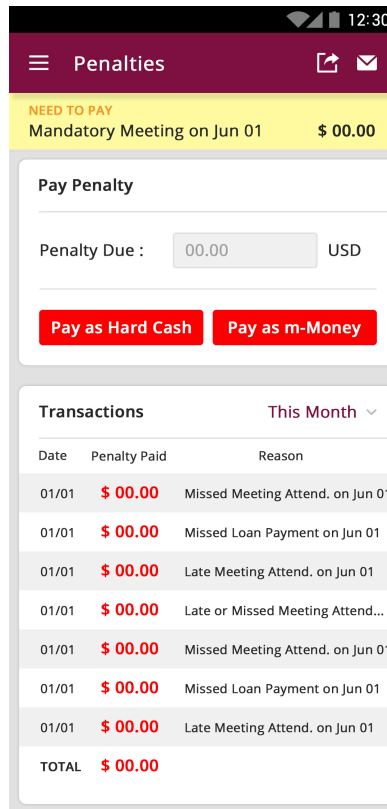
- Chosen period, the user can select one of the predefined values or chose a custom duration
- A list of transactions, each showing
 - Date
 - Mandatory Savings
 - Voluntary Savings
 - Withdrawal
 - Balance

Transactions				This Month ▾
Date	Mandatory Savings	Voluntary Savings	Withdrawal	Balance
01/01	\$ 00.00	\$ 00.00		\$ 00.00
01/01			\$ 00.00	\$ 00.00
01/01	\$ 00.00			\$ 00.00
01/01	\$ 00.00		\$ 00.00	\$ 00.00
01/01	\$ 00.00	\$ 00.00		\$ 00.00
01/01	\$ 00.00			\$ 00.00

7.10 Standard User - Penalties

The Penalties screen shows the following information

- List of penalties to be paid are highlighted on the top
- Pay Penalty section which allows user to enter the amount and mode of payment (Hard Cash or m-Money)
- List of penalties paid for a specific duration. The user can select one of the predefined values or chose a custom duration.



Penalties

NEED TO PAY
Mandatory Meeting on Jun 01 \$ 00.00

Pay Penalty

Penalty Due : 00.00 USD

Pay as Hard Cash **Pay as m-Money**

Transactions This Month ▾

Date	Penalty Paid	Reason
01/01	\$ 00.00	Missed Meeting Attend. on Jun 01
01/01	\$ 00.00	Missed Loan Payment on Jun 01
01/01	\$ 00.00	Late Meeting Attend. on Jun 01
01/01	\$ 00.00	Late or Missed Meeting Attend...
01/01	\$ 00.00	Missed Meeting Attend. on Jun 01
01/01	\$ 00.00	Missed Loan Payment on Jun 01
01/01	\$ 00.00	Late Meeting Attend. on Jun 01
TOTAL	\$ 00.00	

7.11 Standard User - Loans Passbook

The Loans Passbook screen shows the following information

- Loan Summary section
- Repay Loan
- Loan Transaction history

12:30

100%

☰

Loans Passbook

🔄

✉

Loan Summary

+ Request a Loan

Loan Amount	Duration	Interest Rate	Repaid	Balance
\$ 00.00	01/01 - 06/01	00%	\$ 00.00	\$ 00.00

Repay Loan

Repayment \$ 00.00 / week

Amount :

00.00

USD

Pay as Cash

Pay as m-Money

Transactions

This Month ▾

Date	Loan Taken	Repayments	Balance
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01	\$ 00.00		\$ 00.00

7.11.1 Standard User - Loans Summary

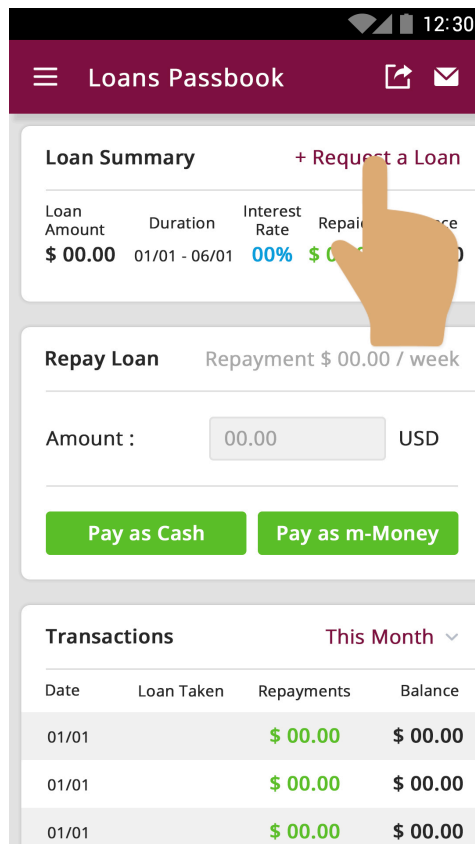
The Loans Summary screen shows the following information

- A list of loans with each showing
 - Loan amount
 - Duration
 - Interest Rate
 - Repaid amount
 - Balance amount
- A link to request a new loan

Loan Summary					+ Request a Loan
Loan Amount	Duration	Interest Rate	Repaid	Balance	
\$ 00.00	01/01 - 06/01	00%	\$ 00.00	\$ 00.00	

7.11.2 Standard User - Request a Loan

The user can click this option to avail a new loan.



Loan Summary					+ Request a Loan
Loan Amount	Duration	Interest Rate	Repaid	Balance	
\$ 00.00	01/01 - 06/01	00%	\$ 00.00	\$ 00.00	

Repay Loan Repayment \$ 00.00 / week

Amount : USD

[Pay as Cash](#) [Pay as m-Money](#)

Transactions [This Month](#) ▾

Date	Loan Taken	Repayments	Balance
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00

This will open another screen where the user needs to enter various parameters related to the loan request.

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A screenshot of a mobile application interface titled "Request Loans". The interface is divided into several sections. At the top, there's a header bar with a back arrow, the title "Request Loans", and a menu icon. Below this, a section labeled "Loans" shows "Group Pending Cash on hand \$ 00.00". A form field for "Amount" is set to "00.00" with a "USD" label. The "Terms" section follows, displaying "The group interest rate is 00 % per month :". It has two radio button options: "Enter Loan Duration" (which is selected and highlighted in green) and "Enter Weekly Repayment Amount". Below these, a "Weekly Repayment Amount" field is set to "00.00" with a "USD" label. The "Loan Duration" is set to "10 Weeks". The "Loan Purpose" section has two radio button options: "Business" (selected and highlighted in green) and "Consumption". A "Note" field contains the text "Optional". At the bottom, there's a "Request Loan as :" section with two radio button options: "Cash" (selected and highlighted in green) and "m- Money". At the very bottom, there are two buttons: "Cancel" and "Request Loan".

The user needs to enter the following information

- Loan amount
- Loan Terms
 - Loan duration
 - OR Weekly repayment amount
 - Loan purpose
 - Optional notes
- Loan mode (Cash or m-Money)

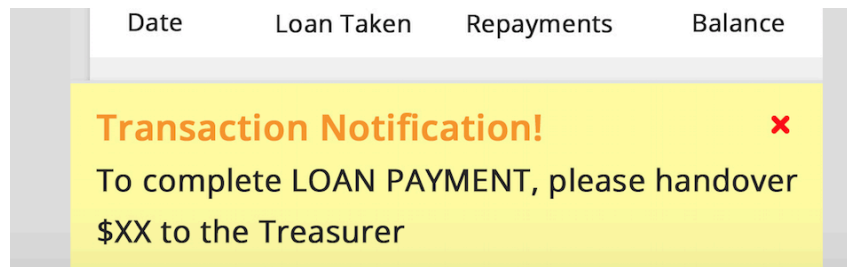
A user will enter either her Weekly Repayment Amount and the app will create the default Loan Duration

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(which is what the picture implies); or the User will enter the Loan Duration and the app will create the Weekly Repayment Amount. So the User will only enter one or the other of these and the one that is not entered by the User will be calculated by the app.

A confirmation message must be shown to the user if the loan is successfully issued. Otherwise, an appropriate error message must be shown.



7.11.3 Standard User - Loan Transactions

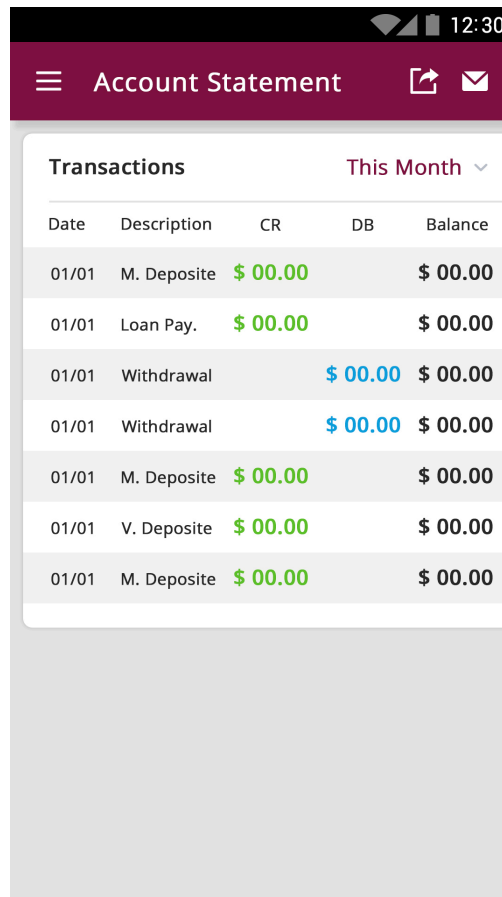
The Loan Transactions section shows the past month's (or requested period's) loan transactions done by the user. The user can select one of the predefined values for time period or chose a custom duration and the app will show loan issuance and payments against that or a series of payments - dependent upon the User's past transactions.

A screenshot of the 'Transactions' section in the app. It shows a table with columns: 'Date', 'Loan Taken', 'Repayments', and 'Balance'. The table is filtered for 'This Month'. The data shows three rows, all with '01/01' in the Date column, '\$ 00.00' in the Repayments column, and '\$ 00.00' in the Balance column. The 'Loan Taken' column is empty in all rows.

Transactions		This Month ▾	
Date	Loan Taken	Repayments	Balance
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00
01/01		\$ 00.00	\$ 00.00

7.12 Standard User - Account Statement

The Account Statement screen shows a list of transactions over a period of time. The user can select one of the predefined values for time period or chose a custom duration.



The screenshot shows a mobile application interface for an 'Account Statement'. At the top, there is a dark purple header bar with a hamburger menu icon on the left, the text 'Account Statement' in the center, and a share icon and an envelope icon on the right. Below the header, there is a white card with a light gray border. Inside the card, the word 'Transactions' is on the left, and 'This Month' with a dropdown arrow is on the right. Below this, there is a table with five columns: 'Date', 'Description', 'CR', 'DB', and 'Balance'. The table contains eight rows of transaction data. The 'CR' and 'DB' columns are used for currency values, with green text for credits and blue text for debits. The 'Balance' column shows the running balance for each transaction.

Date	Description	CR	DB	Balance
01/01	M. Deposit	\$ 00.00		\$ 00.00
01/01	Loan Pay.	\$ 00.00		\$ 00.00
01/01	Withdrawal		\$ 00.00	\$ 00.00
01/01	Withdrawal		\$ 00.00	\$ 00.00
01/01	M. Deposit	\$ 00.00		\$ 00.00
01/01	V. Deposit	\$ 00.00		\$ 00.00
01/01	M. Deposit	\$ 00.00		\$ 00.00

7.13 Stanard User - Other's Loan Requests

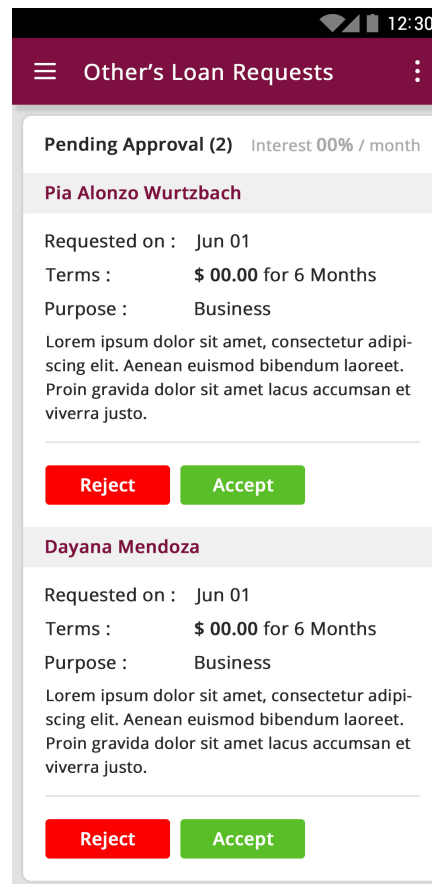
The Other's Loan Requests screen shows the pending loan requests received from other users including

- Name of user requesting the loan

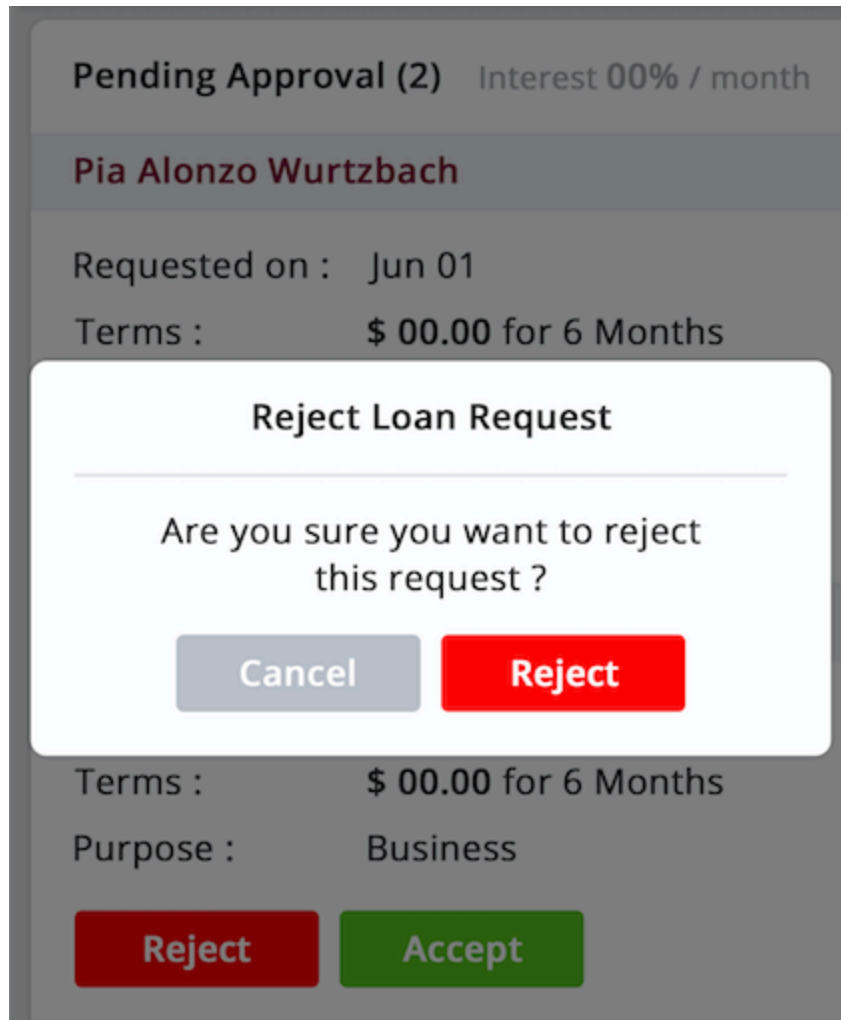
Application Requirements Specification



- Date on which loan requested
- Terms
- Purpose
- Notes

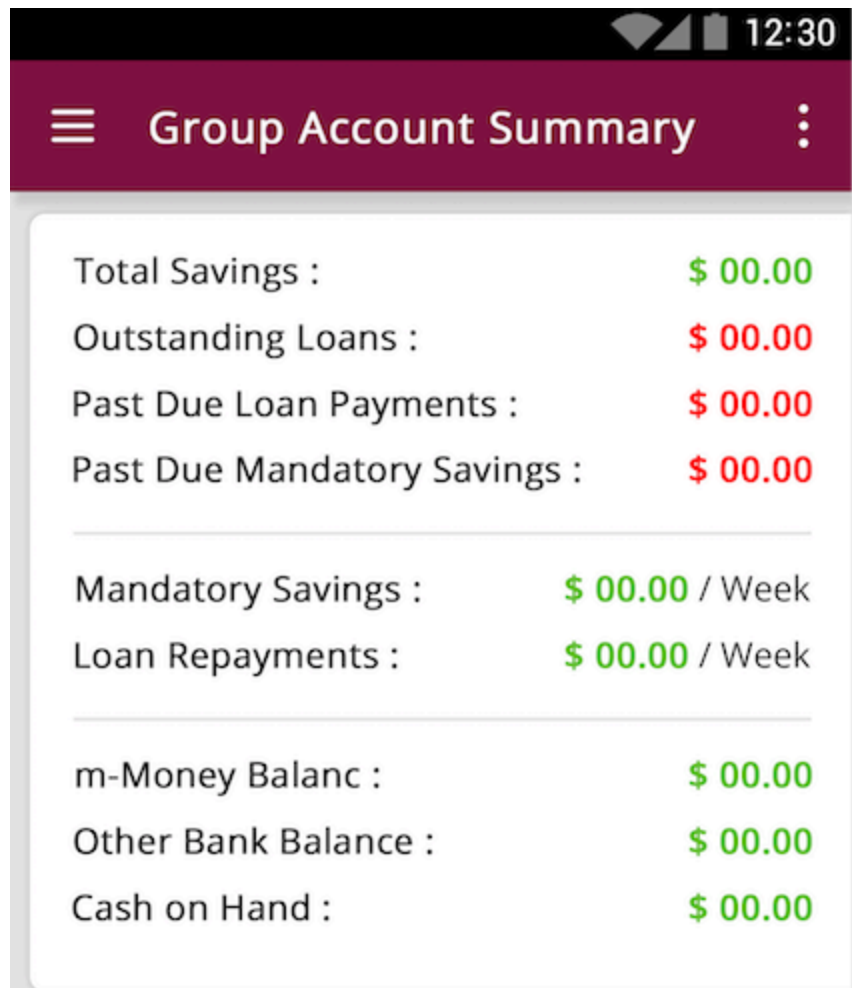


The user has an option to accept or reject each loan request.

A screenshot of a web application interface for loan management. The background is a dark gray panel with white text. At the top, it says 'Pending Approval (2)' and 'Interest 00% / month'. Below this is the name 'Pia Alonzo Wurtzbach' in a dark red font. Further down, it shows 'Requested on : Jun 01' and 'Terms : \$ 00.00 for 6 Months'. A white modal dialog box is centered on the screen with the title 'Reject Loan Request'. Inside the dialog, it asks 'Are you sure you want to reject this request ?' and has two buttons: 'Cancel' (gray) and 'Reject' (red). Below the dialog, the background panel shows 'Terms : \$ 00.00 for 6 Months' and 'Purpose : Business'. At the bottom of the panel are two buttons: 'Reject' (red) and 'Accept' (green).

7.14 Standard User - Group Account Summary

The Group Account Summary shows the summary information as shown below.

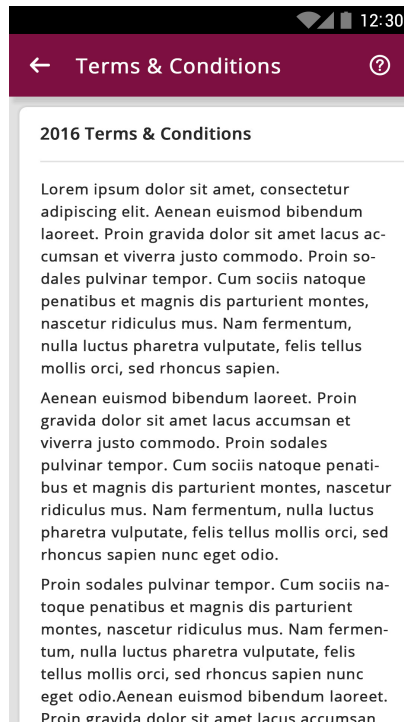


A screenshot of a mobile application interface showing a 'Group Account Summary'. The header is a dark red bar with a hamburger menu icon on the left, the title 'Group Account Summary' in the center, and a vertical ellipsis icon on the right. The status bar at the top shows the time as 12:30. The main content area is white and contains several rows of financial data. Each row has a label on the left and a value on the right. Values are color-coded: green for positive amounts and red for negative amounts. Horizontal lines separate the different sections of the summary.

Group Account Summary	
Total Savings :	\$ 00.00
Outstanding Loans :	\$ 00.00
Past Due Loan Payments :	\$ 00.00
Past Due Mandatory Savings :	\$ 00.00
<hr/>	
Mandatory Savings :	\$ 00.00 / Week
Loan Repayments :	\$ 00.00 / Week
<hr/>	
m-Money Balanc :	\$ 00.00
Other Bank Balance :	\$ 00.00
Cash on Hand :	\$ 00.00

7.15 Standard User - Terms & Conditions

The Terms and Conditions should be configurable. The Admin must be able to configure the Terms and Conditions via an Admin Tool. The app must fetch the Terms and Conditions via an appropriate API.



7.16 Standard User - My Profile

The My Profile screen has the following 3 tabs

- General
- Preferences
- Accessibility

7.16.1 Standard User - General

The 'General' tab should allow the user to enter/update the following information

- Name
- Country
- Gender
- Email
- Date of Birth
- Password

Application Requirements Specification



- Photo

A screenshot of a mobile application's 'My Profile' screen. The screen has a dark purple header with a hamburger menu icon, the text 'My Profile', and a vertical ellipsis icon. Below the header are three tabs: 'General' (selected), 'Preference', and 'Accessibility'. The 'General' tab contains two sections. The first section, 'Basic Information', has an 'Edit' button and fields for Name (Jane Doe), Email (janedoe@example.com), Country (Indonesia), Gender (radio buttons for Male and Female, with Male selected), and Date of Birth (a date picker showing mm/dd/yy). The second section, 'My Account', also has an 'Edit' button and fields for Username (Jane_Doe), Password (masked with dots), and Photo (a placeholder image with a camera icon).

The user can click the 'Edit' button in respective sections to update the information. This will toggle the 'Edit' button to 'Save'.

- If the user enters an invalid parameter, an appropriate error message must be shown

7.16.2 Standard User - Preferences

The 'General' tab should allow the user to enter/update the following information

- m-Money Balance
- Savings Passbook
- Loans Passbook

Application Requirements Specification



- External Bank Savings
- Local Bank
- Currency

A screenshot of a mobile application interface. At the top, a dark purple header bar contains a hamburger menu icon, the text 'My Profile', and a vertical ellipsis icon. Below the header, three tabs are visible: 'General', 'Preference' (which is selected and highlighted with a red underline), and 'Accessibility'. The main content area is divided into two sections. The first section is titled 'My Wallet' with an 'Edit' button in red text. It contains four rows, each with a label and a value: 'm-Money Balance : \$ 00.00', 'Savings Passbook : \$ 00.00', 'Loans Passbook : \$ 00.00', and 'External Bank Savings : \$ 00.00'. The second section is titled 'Bank' with an 'Edit' button in red text. It contains two rows: 'Local Bank : Lorem Ipsum Bank' and 'Currency : USD'. The background is a light gray, and the text is primarily black, with red used for emphasis on buttons and the selected tab.

The user can click the 'Edit' button in respective sections to update the information. This will toggle the 'Edit' button to 'Save'.

- If the user enters an invalid parameter, an appropriate error message must be shown

7.16.3 Standard User - Accessibility

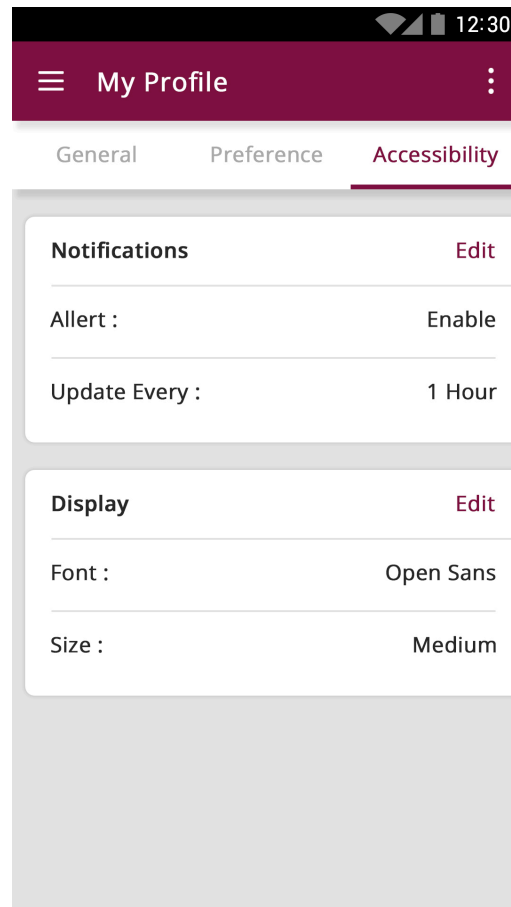
The 'Accessibility' tab should allow the user to enter/update the following information

- Whether notifications are enabled or not
- Notification frequency (5 Minutes, 10 Minutes, 15 Minutes, Every Hour, Every day - these should be configurable via the admin tool)
- Display

Application Requirements Specification



- Font
- Size



If the user changes the display to another font/ size, it should be instantly reflected once saved.

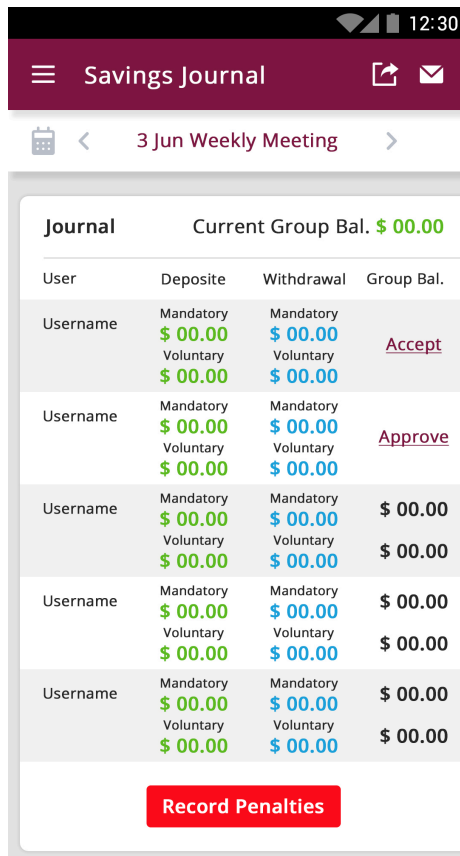
The user can click the 'Edit' button in respective sections to update the information. This will toggle the 'Edit' button to 'Save'.

- If the user enters an invalid parameter, an appropriate error message must be shown

The subsequent sections below cover the screen-wise requirements for MC user

7.17 MC User - Savings Journal

The Savings Journal allows a MC user to view the deposit, withdrawal and group balance for standard users. The MC user can do it based on the last weekly meeting or select a custom duration by clicking the calendar icon.



The screenshot shows a mobile application interface for the 'Savings Journal'. At the top, there's a purple header bar with a menu icon, the title 'Savings Journal', and share and email icons. Below the header, a navigation bar shows a calendar icon, a back arrow, the text '3 Jun Weekly Meeting', a forward arrow, and another calendar icon. The main content area has a title 'Journal' and a subtitle 'Current Group Bal. \$ 00.00'. Below this is a table with columns: 'User', 'Deposit', 'Withdrawal', and 'Group Bal.'. The table contains five rows of data. Each row has a 'Username' column, a 'Deposit' column with 'Mandatory' and 'Voluntary' sub-rows, a 'Withdrawal' column with 'Mandatory' and 'Voluntary' sub-rows, and a 'Group Bal.' column. The 'Deposit' and 'Withdrawal' columns show values of '\$ 00.00'. The 'Group Bal.' column shows '\$ 00.00'. The first two rows have an 'Accept' button, and the next two rows have an 'Approve' button. The last row has no button. At the bottom of the table is a red button labeled 'Record Penalties'.

User	Deposit	Withdrawal	Group Bal.
Username	Mandatory \$ 00.00	Mandatory \$ 00.00	Accept
	Voluntary \$ 00.00	Voluntary \$ 00.00	
Username	Mandatory \$ 00.00	Mandatory \$ 00.00	Approve
	Voluntary \$ 00.00	Voluntary \$ 00.00	
Username	Mandatory \$ 00.00	Mandatory \$ 00.00	\$ 00.00
	Voluntary \$ 00.00	Voluntary \$ 00.00	\$ 00.00
Username	Mandatory \$ 00.00	Mandatory \$ 00.00	\$ 00.00
	Voluntary \$ 00.00	Voluntary \$ 00.00	\$ 00.00
Username	Mandatory \$ 00.00	Mandatory \$ 00.00	\$ 00.00
	Voluntary \$ 00.00	Voluntary \$ 00.00	\$ 00.00

Record Penalties

The MC user can accept a deposit by clicking the 'Accept' button mentioned for user's deposit transaction. For the standard user for which deposit is accepted, a confirmation message is shown at the bottom of the screen stating "Your DEPOSIT of \$xx has been recorded"

Application Requirements Specification



Similarly, the MC user can approve a withdrawal by clicking the Approve button mentioned for user's withdrawal transaction. For the standard user for which withdrawal is accepted, a confirmation message is shown at the bottom of the screen stating "Your WITHDRAWAL of \$xx has been recorded"

The MC user can also apply penalties by clicking the 'Record Penalties' button in the Savings Journal screen shown above. This shows a list of users and the corresponding penalties to be applied. The MC user can choose appropriate penalties by clicking the corresponding checkboxes and then clicking 'Apply Penalties'

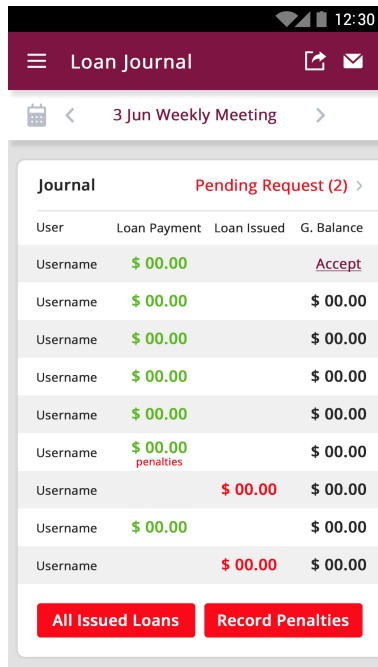
A screenshot of a mobile application interface titled "Record Penalties". At the top, there is a navigation bar with a back arrow, the title "Record Penalties", and a menu icon. Below the bar, there is a subtitle "3 Jun Weekly Meeting" with left and right navigation arrows. The main content area contains a message: "The following members have failed to make the weekly mandatory deposit of \$ 00.00". Below this message is a table with three columns: "User", "Penalty for missing Mandatory payment", and "Penalty for missing Meeting". The table has three rows, each starting with "Username" followed by a checkbox and the amount "\$ 00.00". At the bottom of the screen, there are two buttons: "Cancel" and "Apply Penalties".

User	Penalty for missing Mandatory payment	Penalty for missing Meeting
Username	<input type="checkbox"/> \$ 00.00	<input type="checkbox"/> \$ 00.00
Username	<input type="checkbox"/> \$ 00.00	<input type="checkbox"/> \$ 00.00
Username	<input type="checkbox"/> \$ 00.00	<input type="checkbox"/> \$ 00.00

7.18 MC User - Loan Journal

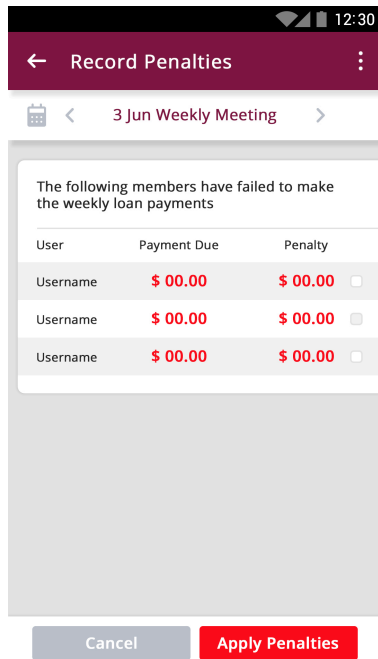
The Loan Journal allows a MC user to view, accept or reject loan requests as well as loan payments for standard users. The MC user can do it based on the last weekly meeting or select a custom duration by clicking the calendar icon.

Application Requirements Specification



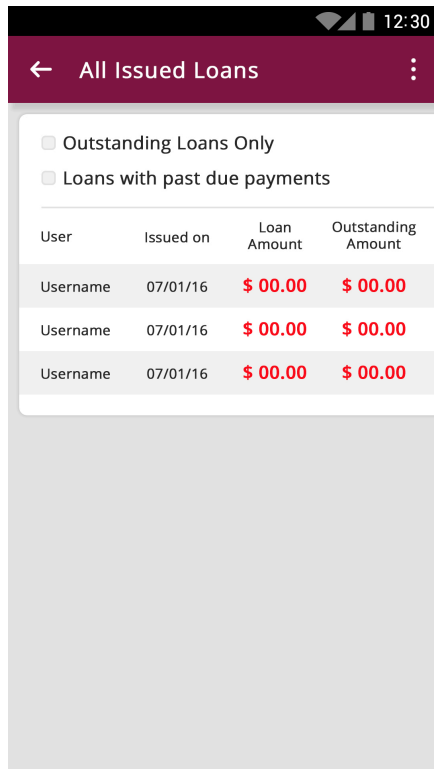
The MC user can view all issued loans or record penalties by clicking on the appropriate buttons. They can also view pending loan requests by clicking the 'Pending Requests' button in the header. They can accept a loan payment by clicking the 'Accept' button in the list view.

Application Requirements Specification



The MC user can also apply penalties by clicking the 'Record Penalties' button in the Loan Journal screen shown above. This shows a list of users and the corresponding penalties to be applied. The MC user can choose appropriate penalties by clicking the corresponding checkboxes and then clicking 'Apply Penalties'.

Application Requirements Specification

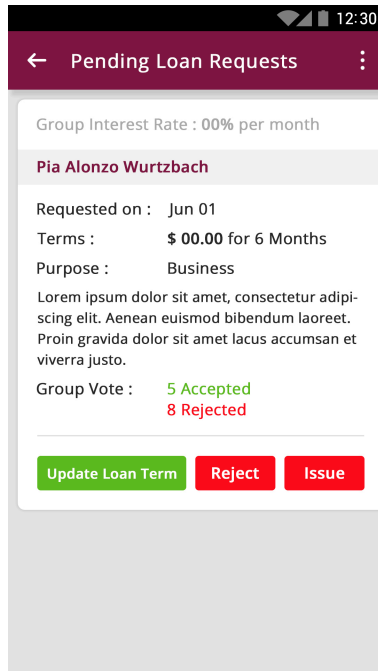


The MC user can view all issued loans as shown above. The loans can also be filtered based on the following criteria

- Outstanding Loans only - This will hide loans which have been paid
- Loans with past due payments - This will show loans with past due payments

The MC user can accept/ decline a loan payment from a standard user.

Application Requirements Specification



The MC user can process any pending loan requests and perform any of the following actions

- Update Loan term
- Issue loan (accept loan request)
- Reject loan request

Application Requirements Specification

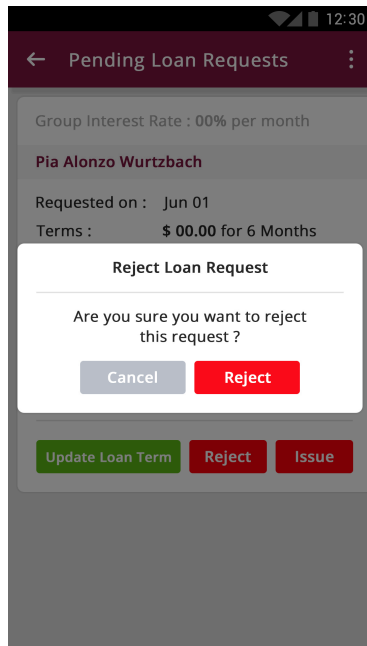
A screenshot of a mobile application interface titled "Update Loan Term". At the top, there's a status bar showing the time as 12:30. Below the title bar, a "Loans" section shows "Group Pending Cash on hand \$ 00.00". A form field for "Amount" is set to "00.00" with "USD" as the currency. The "Terms" section has an "Interest Rate" of "2 / Month". There are two radio button options: "Enter Loan Duration" (which is selected and highlighted in green) and "Enter Weekly Repayment Amount". Below this, the "Loan Duration" is set to "8 Weeks". The "Weekly Repayment Amount" is displayed as "\$ 00.00". At the bottom, there are two buttons: "Cancel" and "Update Term".

For updating the loan term, the MC user will enter either the Weekly Repayment Amount and the app will create the default Loan Duration (which is what the picture implies); or the MC User will enter the Loan Duration and the app will create the Weekly Repayment Amount. So the User will only enter one or the other of these and the one that is not entered by the User will be calculated by the app.

A confirmation message must be shown at the bottom of the screen to the standard user (who request the loan) if the loan is successfully issued. The message states "Notification to User: "Your LOAN PAYMENT of \$xx has been recorded"

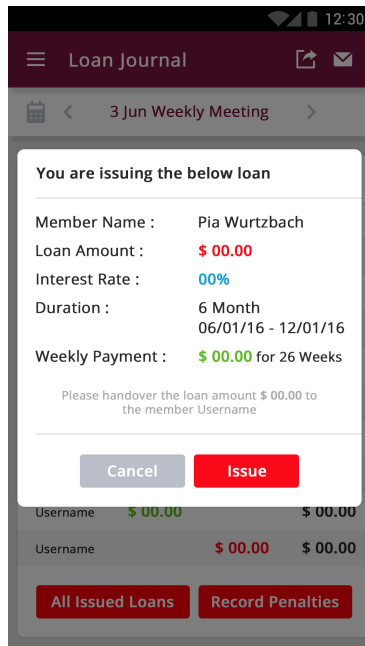
Otherwise, an appropriate error message must be shown.

Application Requirements Specification

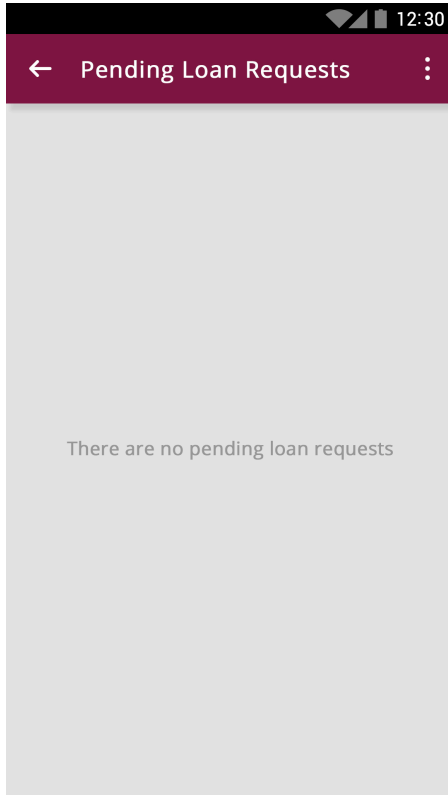


The MC user can reject a pending loan request as shown above. In this case, a loan is not issued to the requesting standard user and they receive a notification on the bottom of the screen - "Your requested loan has not been approved"

Application Requirements Specification



The MC user can approve a loan request. In this case, the loan amount, duration, requesting member, interest rate and weekly payment amount is shown to the MC user so that the loan can be issued. The standard user then receives a notification at the bottom of the screen stating “Your Loan Request has been approved. Please receive \$XX from Treasurer”



Once the MC user has processed all pending loan requests, a message is shown indicating there are no pending loan requests.

7.19 MC User - Group Account Summary

The MC user can view Group Account Summary and transfer funds as shown below.

Application Requirements Specification

A screenshot of a mobile application interface titled 'Group Account Summary'. The header is a dark purple bar with a hamburger menu icon on the left and a three-dot menu icon on the right. The main content area is white and displays financial data in a list format. The data is organized into sections separated by thin horizontal lines. At the bottom of the white area is a green button labeled 'Transfer Funds'. Below the white area is a grey rectangular section.

Total Savings :	\$ 00.00
Outstanding Loans :	\$ 00.00
Past Due Loan Payments :	\$ 00.00
Past Due Mandatory Savings :	\$ 00.00
<hr/>	
Mandatory Savings :	\$ 00.00 / Week
Loan Repayments :	\$ 00.00 / Week
<hr/>	
m-Money Balance :	\$ 00.00
Other Bank Balance :	\$ 00.00
Cash on Hand :	\$ 00.00

If the MC user clicks 'Transfer Funds', it shows the option to chose from, to and the amount.

A screenshot of a mobile application interface titled 'Record Transfer'. The header is a dark purple bar with a back arrow icon on the left and a three-dot menu icon on the right. The main content area is white and contains a form for recording a transfer. The form has three main sections: 'From' with a dropdown menu, 'To' with a dropdown menu, and 'Amount' with a text input field and a currency selector. Below the form is a grey rectangular box containing a note. At the bottom are two buttons: 'Cancel' and 'Record Transfer'.

Transfer

From :
Select

To :
Select

Amount : 00.00 USD

Please record all transfers made from / to group's cash box to external secure deposits

Cancel Record Transfer

Application Requirements Specification



Once the MC user hits 'Record Transfer', a confirmation message is shown that the transfer has been completed successfully.

7.20 MC User - Settings

The MC user can configure the following settings for any group.

A screenshot of a mobile application interface. At the top, there's a dark purple header with a hamburger menu icon, the word 'Settings', and a vertical ellipsis icon. Below the header, there are two tabs: 'Group Financial Settings' (which is selected and highlighted with a purple underline) and 'Member Settings'. The main content area is a light gray box with a rounded bottom. It contains a list of settings under the heading 'Group Settings' with an 'Edit' link in red. The settings are: 'Cycle : 6 Months', 'Loan Interest Rate / Month : 00%' (in blue), 'Weekly Mandatory Payment : \$ 00.00' (in green), 'Penalty for missing weekly mandatory payment : \$ 00.00' (in red), 'Penalty for missing loan payment : \$ 00.00' (in red), 'Penalty for late or missed payment meeting attendance : \$ 00.00' (in red), 'Weekly Meeting Time : 06:00 PM', 'Meeting Venue : Lorem Venue', 'Empowerment Worker Name : John Doe', and 'Empowerment Contact Number : 0000-0000-0000'. At the bottom of the settings list is a red button labeled 'Terms & Conditions'.

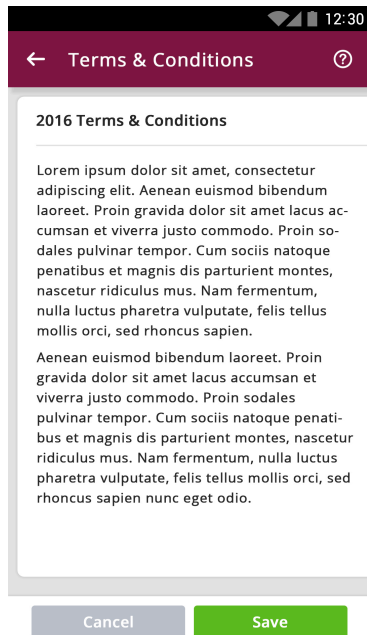
The user can edit the Group Financial Settings for any group as shown below. Hitting 'Save' will reflect these settings on the group.

Application Requirements Specification

A screenshot of a mobile application interface showing the 'Settings' screen. The top bar is dark red with a hamburger menu icon and the text 'Settings'. Below this, there are two tabs: 'Group Financial Settings' (selected) and 'Member Settings'. The main content area is titled 'Group Settings' with a 'Save' button in red. The settings include: 'Cycle' (6, Month), 'Loan Interest Rate / Month' (00, %), 'Weekly Mandatory Payment' (00.00, USD), 'Penalty for missing weekly mandatory payment' (00.00, USD), 'Penalty for missing loan payment' (00.00, USD), 'Penalty for late or missed meeting attend' (00.00, USD), 'Weekly Meeting Time' (06:00 PM, dropdown), 'Meeting Venue' (Lorem Venue, text input), 'Empowerment Worker Name' (John Doe, text input), and 'Empowerment Contact Number' (0000-0000-0000, text input).

Similarly, the MC user can modify the terms and conditions as shown below.

Application Requirements Specification



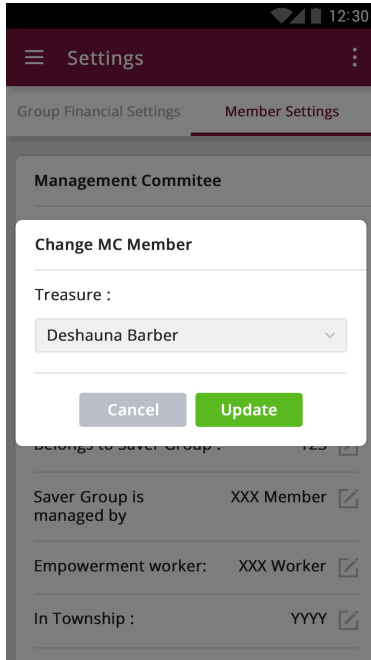
The MC user can also modify the member settings as shown below.

Application Requirements Specification

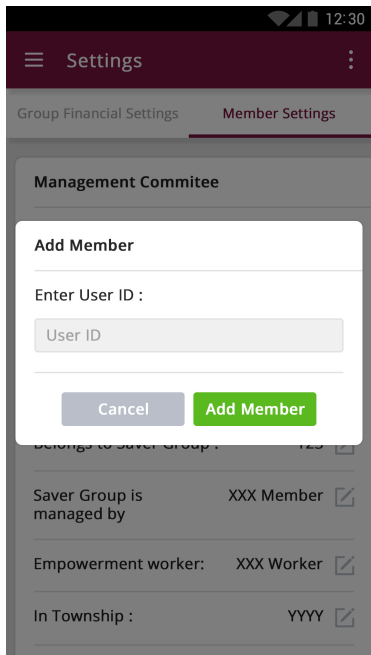
A screenshot of a mobile application's 'Settings' screen. The top bar is maroon with a hamburger menu icon on the left and a vertical ellipsis on the right. Below the bar, there are two tabs: 'Group Financial Settings' and 'Member Settings', with the latter being selected and highlighted in maroon. The main content area is white and contains a 'Management Committee' section with a list of roles and names, each with an edit icon (a square with a pencil). The roles and names are: Chairperson: Pia Wurtzbach, Secretary: Olivia Jordan, Treasurer: Deshauna Barber, Controller: Chelsea Hardin, Belongs to Saver Group: 123, Saver Group is managed by: XXX Member, Empowerment worker: XXX Worker, In Township: YYYY, In District: XXXX, In Country: Tanzania, and Funded by: Project XYZ. Below this is a 'Group Members' section with a '+ Add Member' button. It includes a search bar with a magnifying glass icon and the text 'Search Member'. Below the search bar is a list of six rows, each containing the text 'Member Name' and a trash can icon.

The MC user can change the role of any user. E.g. they can set a new treasurer as shown below.

Application Requirements Specification

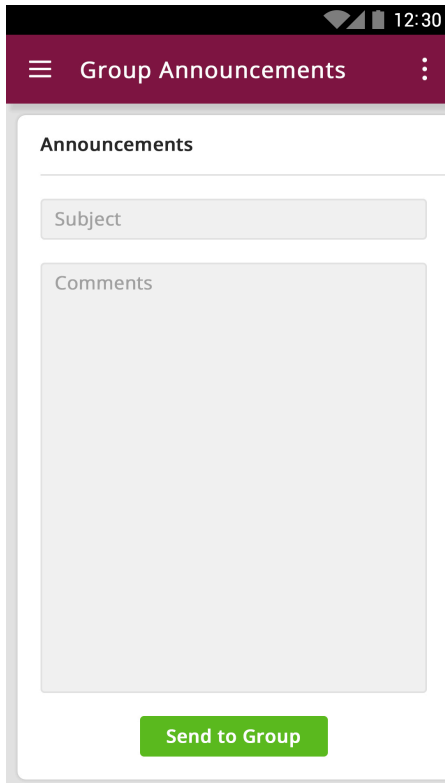


The MC user can add a new member by entering their Id (handle) as shown below



7.21 MC User - Group Announcements

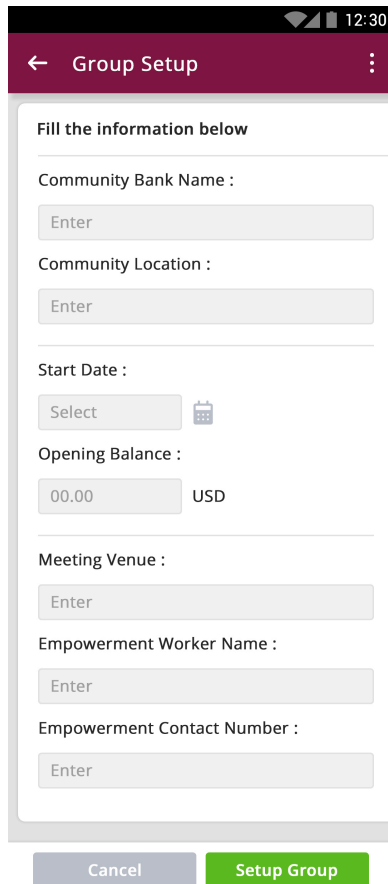
The MC user can send out announcements to a group by selecting this feature as shown below.



The screenshot shows a mobile application interface for 'Group Announcements'. At the top, there is a dark red header bar with a hamburger menu icon on the left, the text 'Group Announcements' in the center, and a vertical ellipsis icon on the right. Below the header, the main content area has a title 'Announcements' followed by a horizontal line. Underneath, there is a light gray rectangular input field labeled 'Subject'. Below that is a larger light gray rectangular area labeled 'Comments'. At the bottom of the form, there is a green button with the text 'Send to Group'.

7.22 MC User - Group Setup

The MC user can modify configuration parameters for the group as shown below.



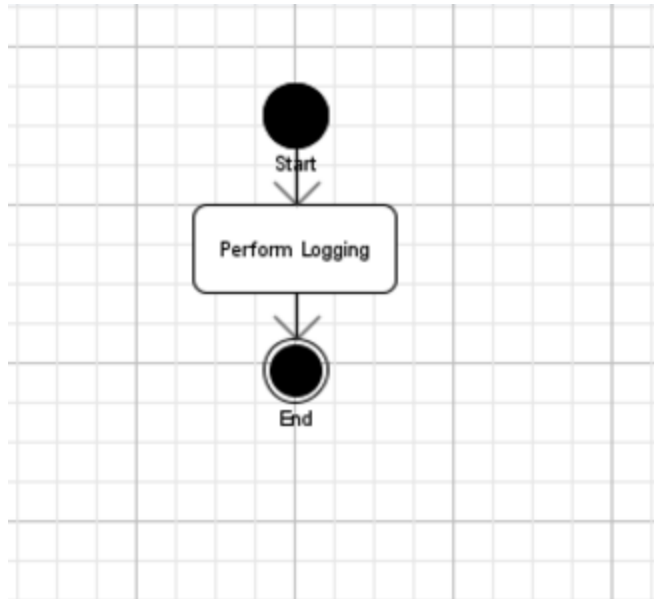
The screenshot shows a mobile application interface for 'Group Setup'. At the top, there's a purple header bar with a back arrow, the text 'Group Setup', and a menu icon. Below the header, the instruction 'Fill the information below' is displayed. The form contains several input fields: 'Community Bank Name' with an 'Enter' button, 'Community Location' with an 'Enter' button, 'Start Date' with a 'Select' button and a calendar icon, 'Opening Balance' with a text input showing '00.00' and a currency selector set to 'USD', 'Meeting Venue' with an 'Enter' button, 'Empowerment Worker Name' with an 'Enter' button, and 'Empowerment Contact Number' with an 'Enter' button. At the bottom, there are two buttons: a grey 'Cancel' button and a green 'Setup Group' button.

8. Logging Requirements

The application will automatically log errors, exceptions, warnings and debug information during its execution. Logging information will be stored to some logging system (like files on the server side). This use case is included by all other user cases.

- Pre-conditions: the application was started and it will constantly log all problems during its execution.
- Post-conditions: all errors, exceptions, warnings and debug information was logged to logging system (like log files).

8.1 Perform Logging Activity



8.1.1 Perform Logging

- The system will log all the errors, exceptions, warning and debug information during the application execution.
- The following data will be logged:
 - Method name (String, max 100 chars, non empty),
 - Description of problem (String, max 1024 chars, non empty),
 - Input arguments (if any, String, max 4096 chars, can be empty),
 - Output results (if any, String, max 4096 chars, can be empty),
 - Date and timestamp (String, full date/time format, max 30 chars, non empty),
 - Etc. – up-to Architect.
- Logging will be performed to the logging system (like log files on the server side).
- The logged information must not include any sensitive information.

9 Glossary

Application Requirements Specification



Definitions

Definition	Description
Admin	The user who uses the admin app

Acronyms

Definition	Description
GUI	Graphical User Interface.
MC	Management Committee