HPE Living Progress - Women Community Savings Android App Requirements Specification

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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.

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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.

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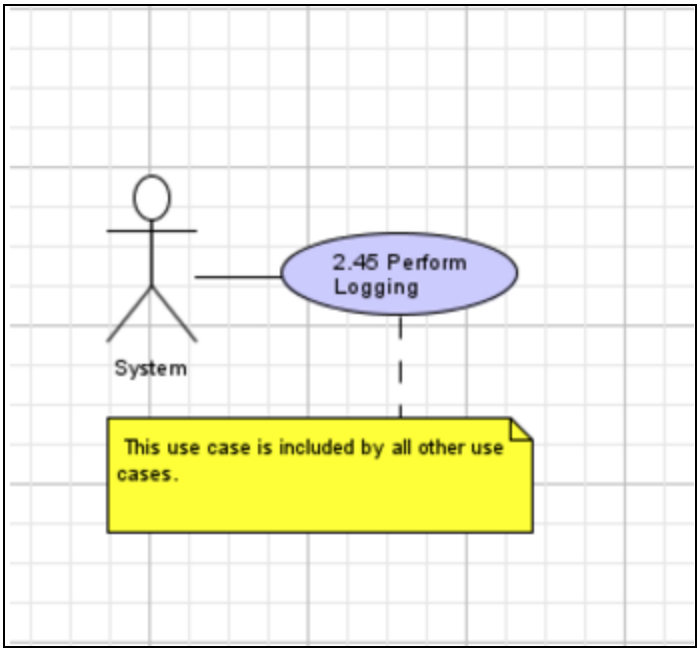
7. Logic Requirements

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.

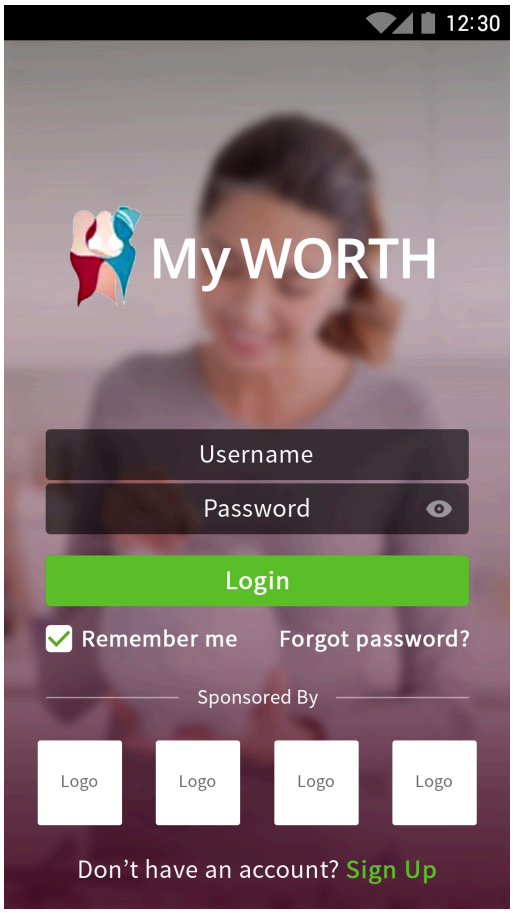


7.1.1 Login [External]

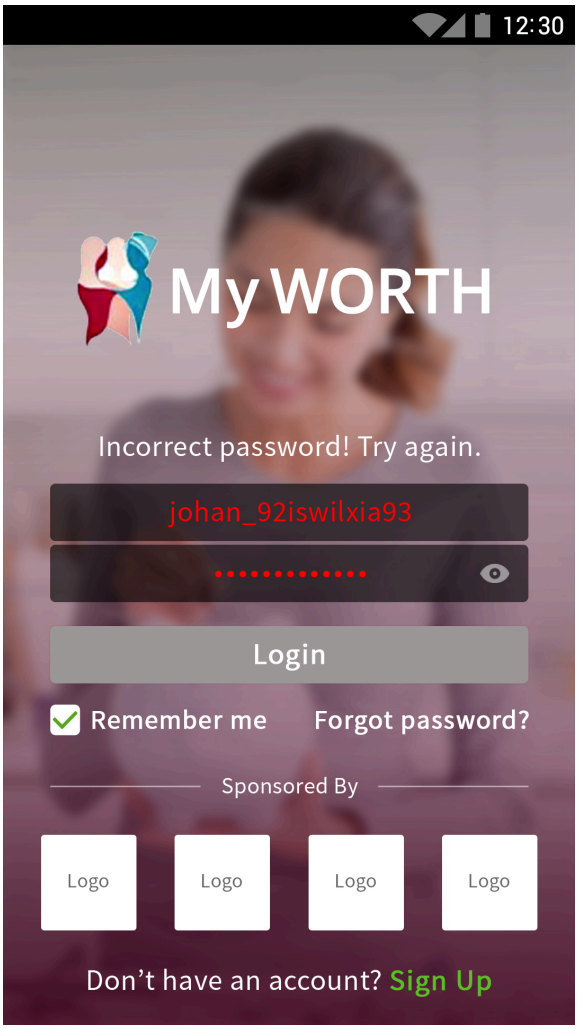
The application will allow users to login by entering their credentials. The application validates user credentials and performs authentication/authorization.

- 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.



- 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.

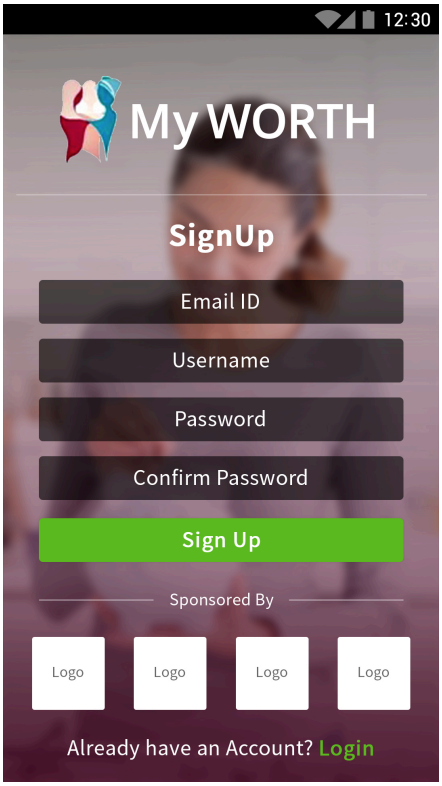
- Pre-conditions: the logged in user pressed "Logout" button or the user session has expired.
- Post-conditions: the user was logged out from the application and cannot work with the application until login again.

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.

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.

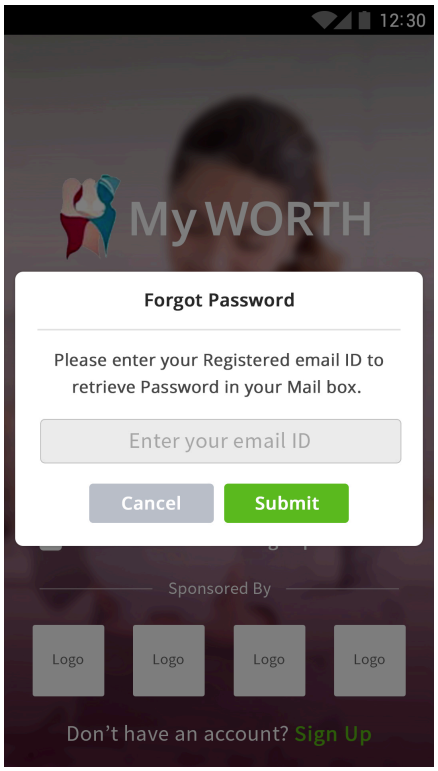
7.2 Remember Me

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).

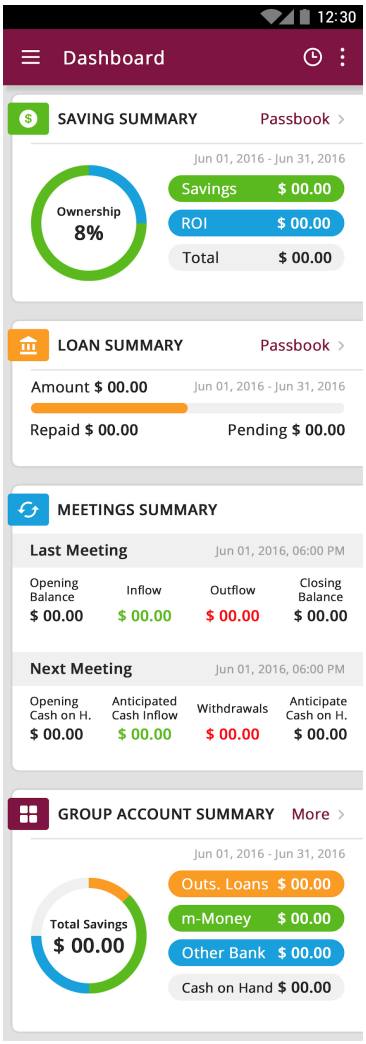


- If the user provides a valid username (email), they should get a link to reset their password
- If the user provides an invalid username (email), the app must show an appropriate error message that the username is not valid.

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



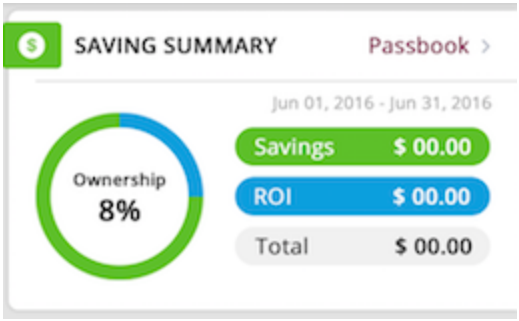
7.4.1 Standard User - Savings Summary

The Savings summary section shows the following information

- Chosen time period
- Ownership % represented as a donut chart
- Savings balance[1]
- ROI balance

[1] Note that penalties flow into the Savings fund

- Total (Savings + ROI) balance

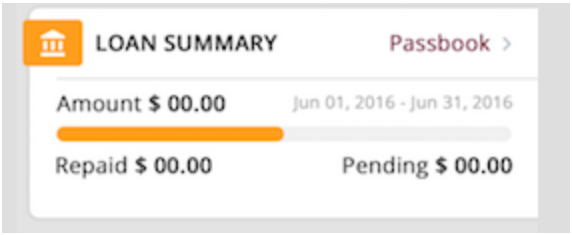


The user can click the Passbook link in the section header to go to Savings screen

7.4.2 Standard User - Loan Summary

The loan summary section section shows the following information

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



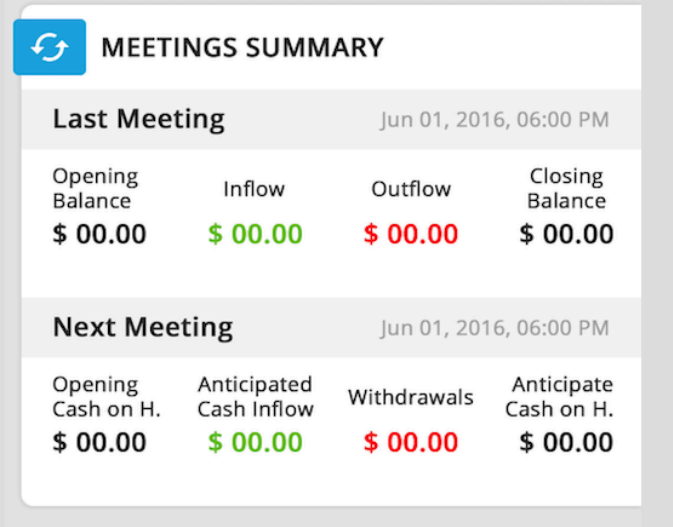
The repaid amount and pending amount are shown on a scale so it's intuitive to know how much % of the loan amount has been repaid and how much of it is pending.

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

- 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)



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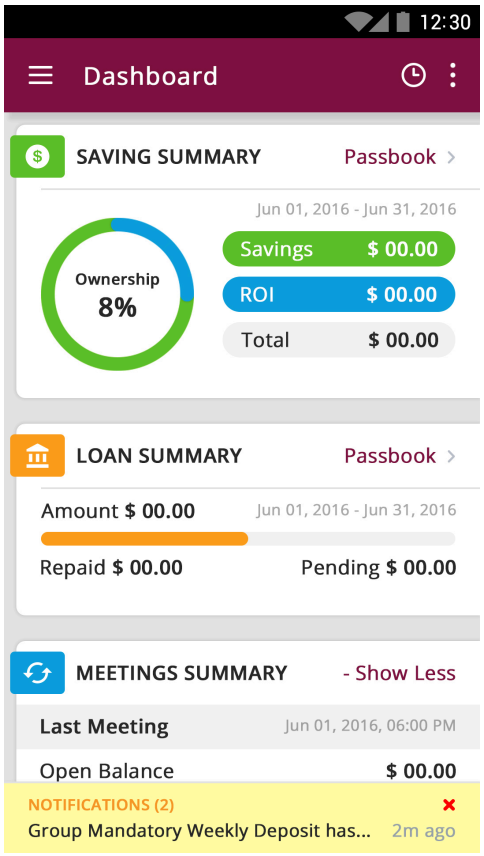
The user can click the More > link in section header to navigate to the Group Account screen.

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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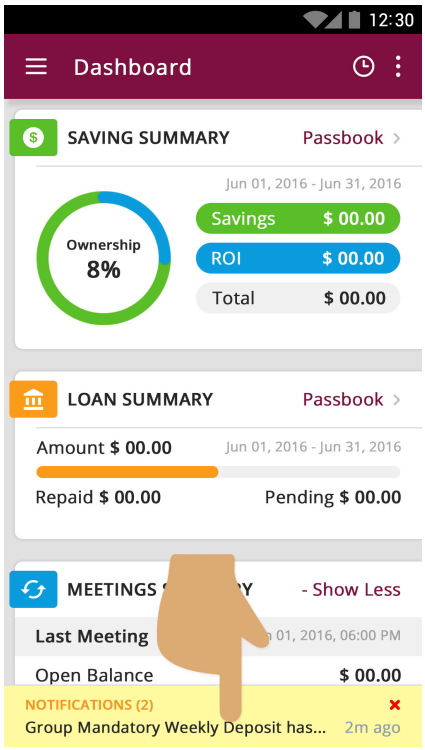
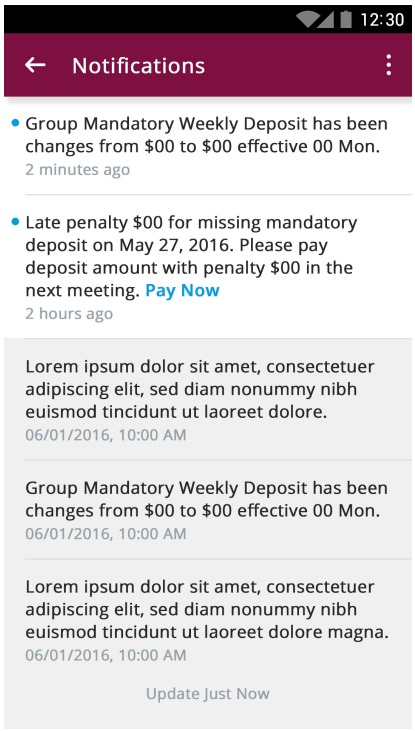
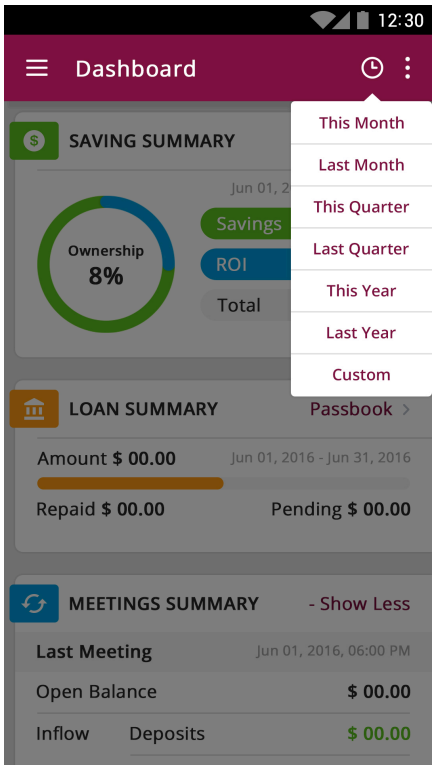


Each notification must have the associated timestamp and a marker indicating whether it's read or unread by the user.



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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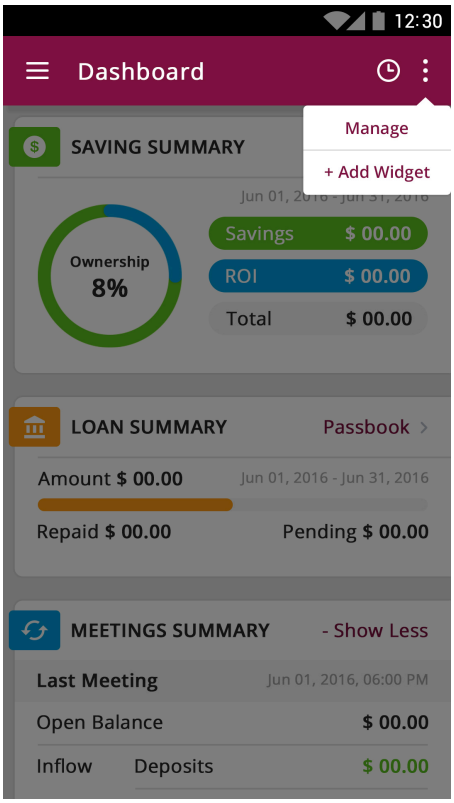
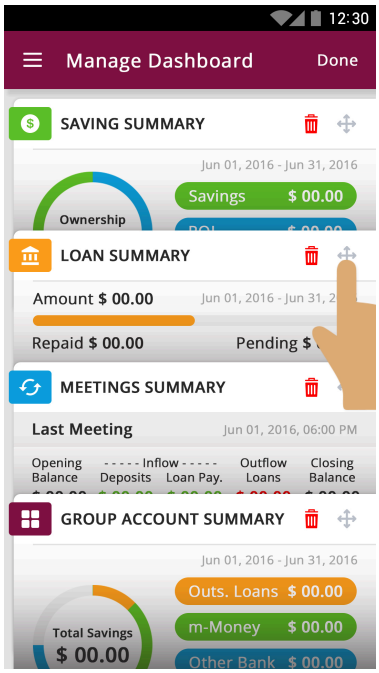


A user can add a new section by clicking the ‘Add Widget’ button. To rearrange or delete the existing sections, click ‘Manage’.

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



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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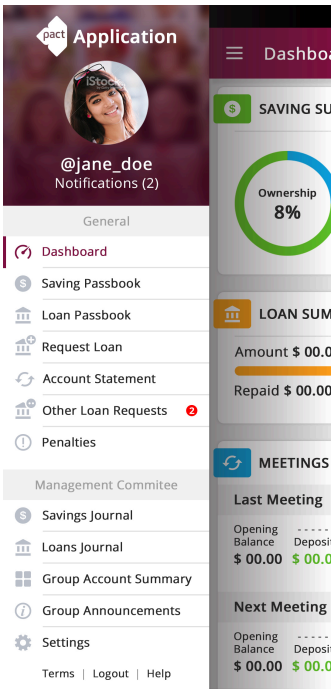


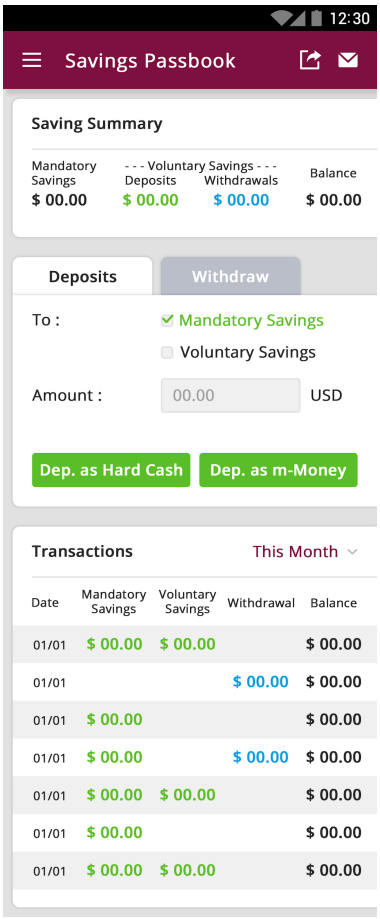
The sidebar shows the following

- 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

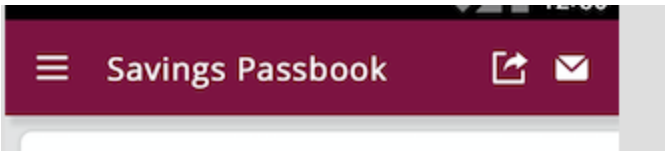
- Savings Summary
- Deposits & Withdrawals
- Transactions



The 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

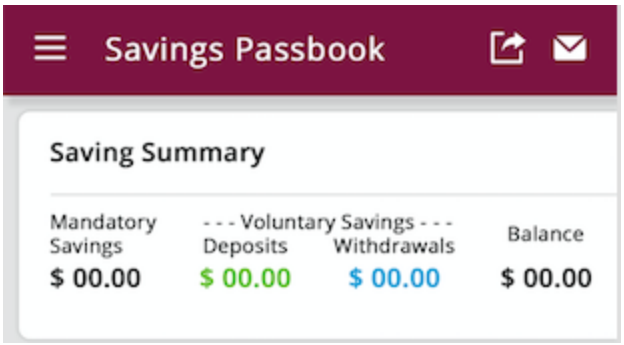
accessible for users who've an email configured as part of their profile.
- The email functionality is also applicable to the Journals-for Savings and Loans- for MC email of the same
- The email functionality for Users is applicable not only to Savings Passbook but also to Loan Passbook too.



7.9.1 Standard User - Savings Summary

The Savings Summary section shows the following information

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



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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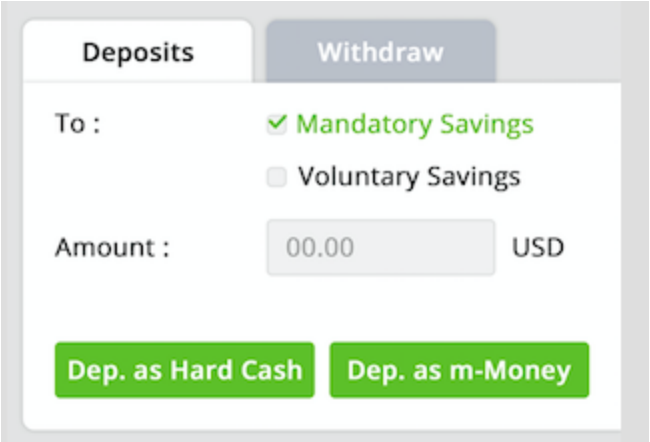
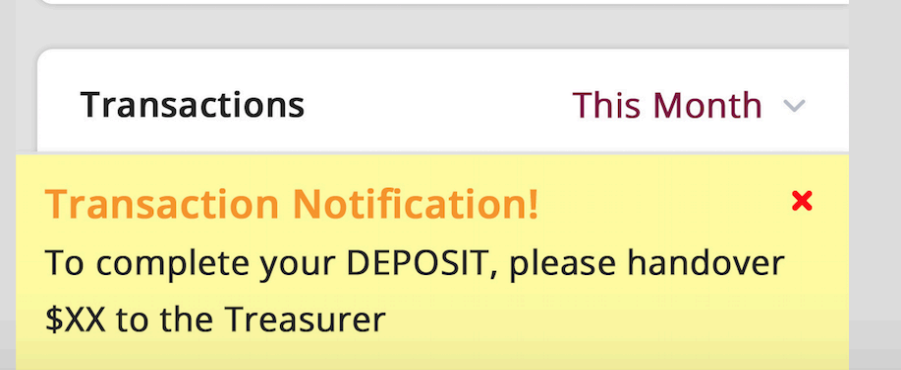


Once the transaction is complete, a confirmation message must be shown to the user at the bottom of the screen (as shown below).

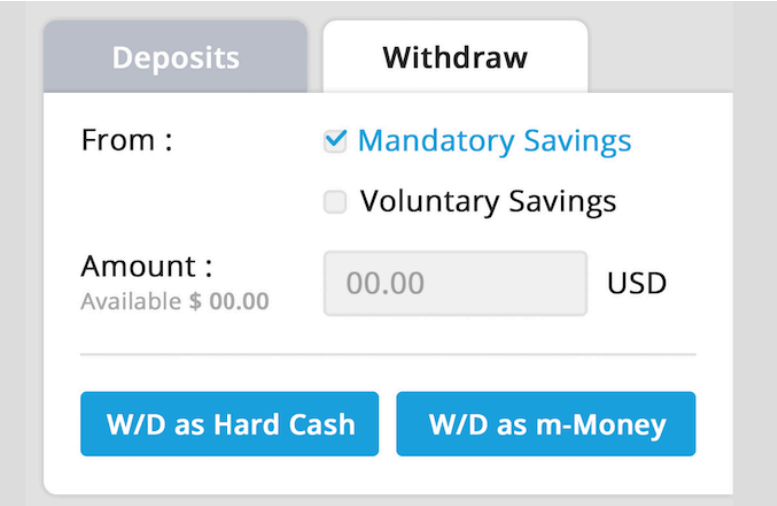


In case of withdrawal transaction, the confirmation message text is "To complete your PENALTY PAYMENT, please handover $XX to the Treasurer"

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

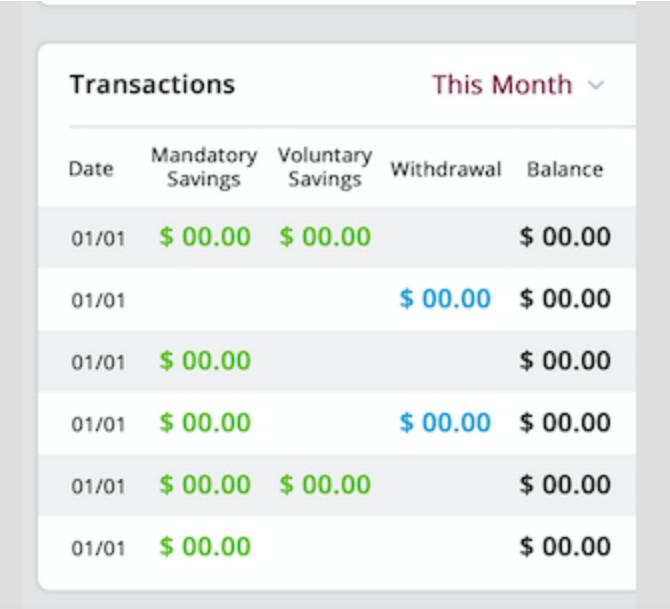


Once the transaction is complete, the transaction (withdraw) will be confirmed similarly to that above.

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



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.

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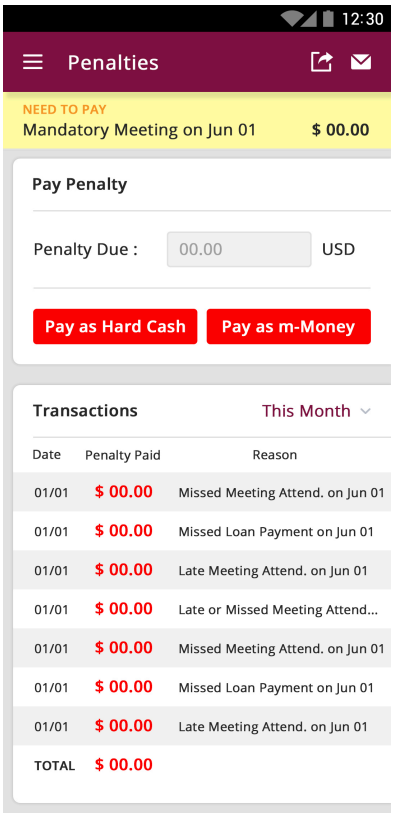
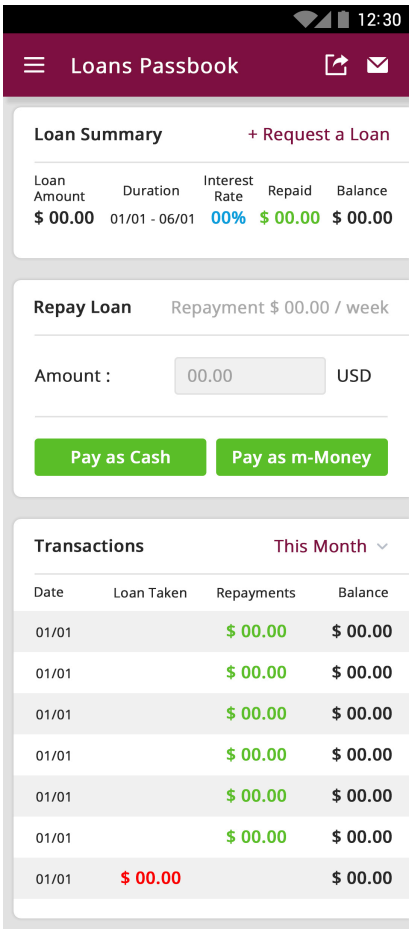


7.11 Standard User - Loans Passbook

The Loans Passbook screen shows the following information

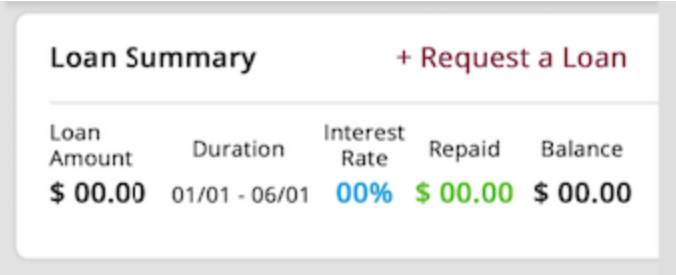
- Loan Summary section
- Repay Loan
- Loan Transaction history



7.11.1 Standard User - Loans Summary

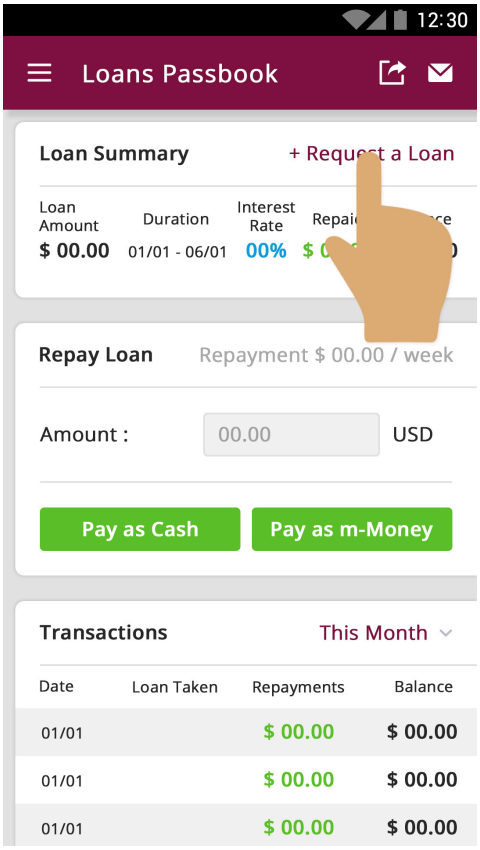
The Loans Summary screen shows the following information

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

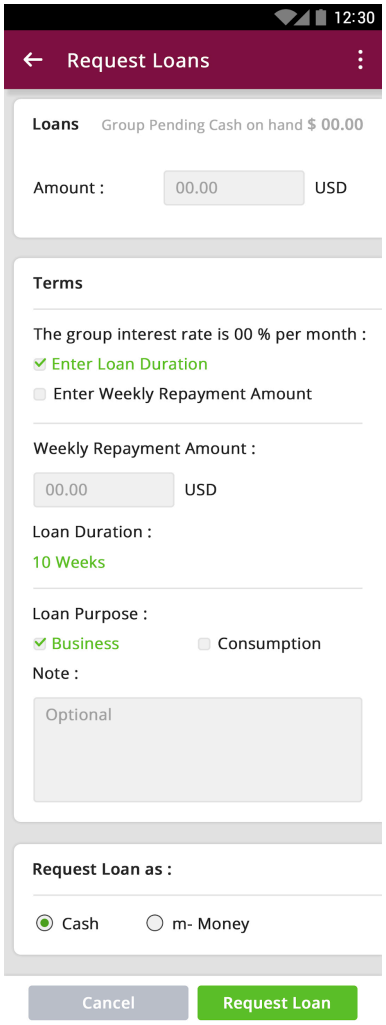


7.11.2 Standard User - Request a Loan

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



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



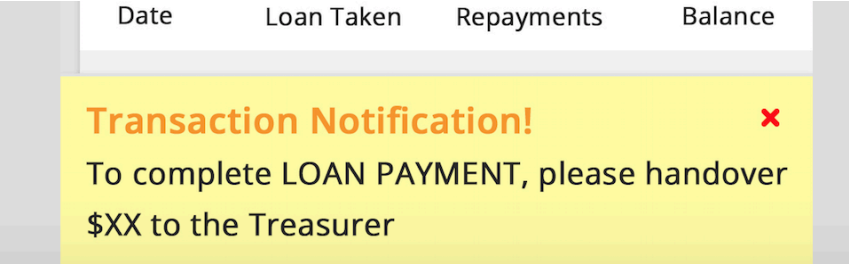
The user needs to enter the following information

- 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

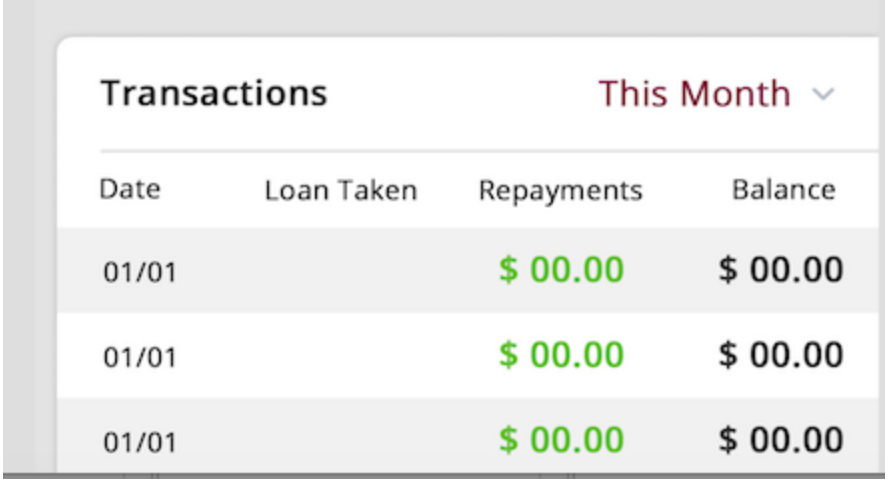
(which is what the picture implies); or the User will enter the Loan Duration and the app will create the Weekly Repayment Amount. So the User will only enter one or the other of these and the one that is not entered by the User will be calculated by the app.

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.



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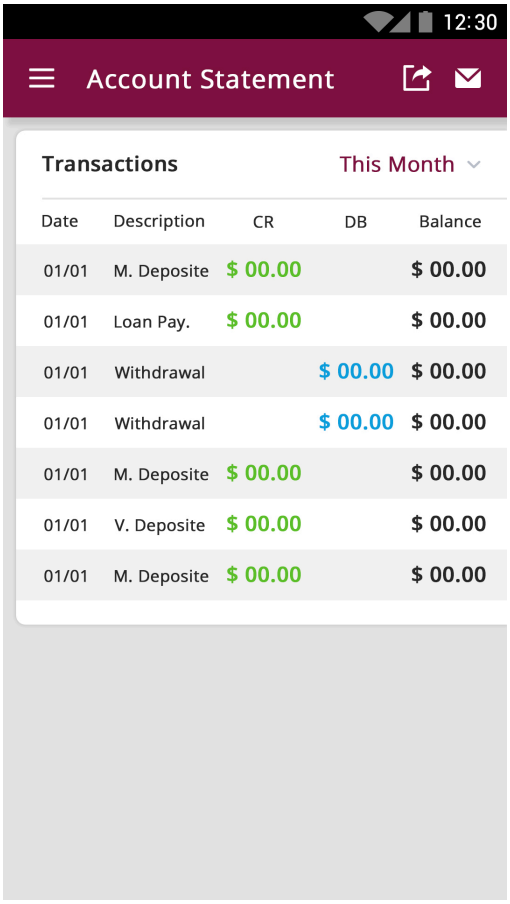
7.12 Standard User - Account Statement

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.

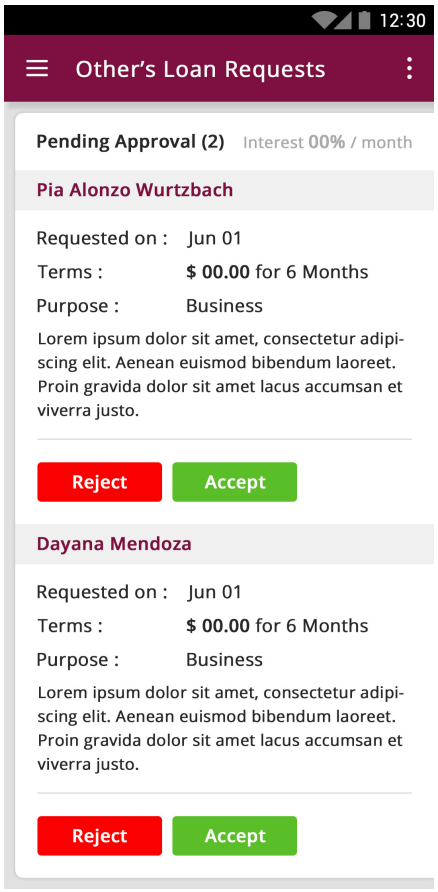


7.13 Stanard User - Other's Loan Requests

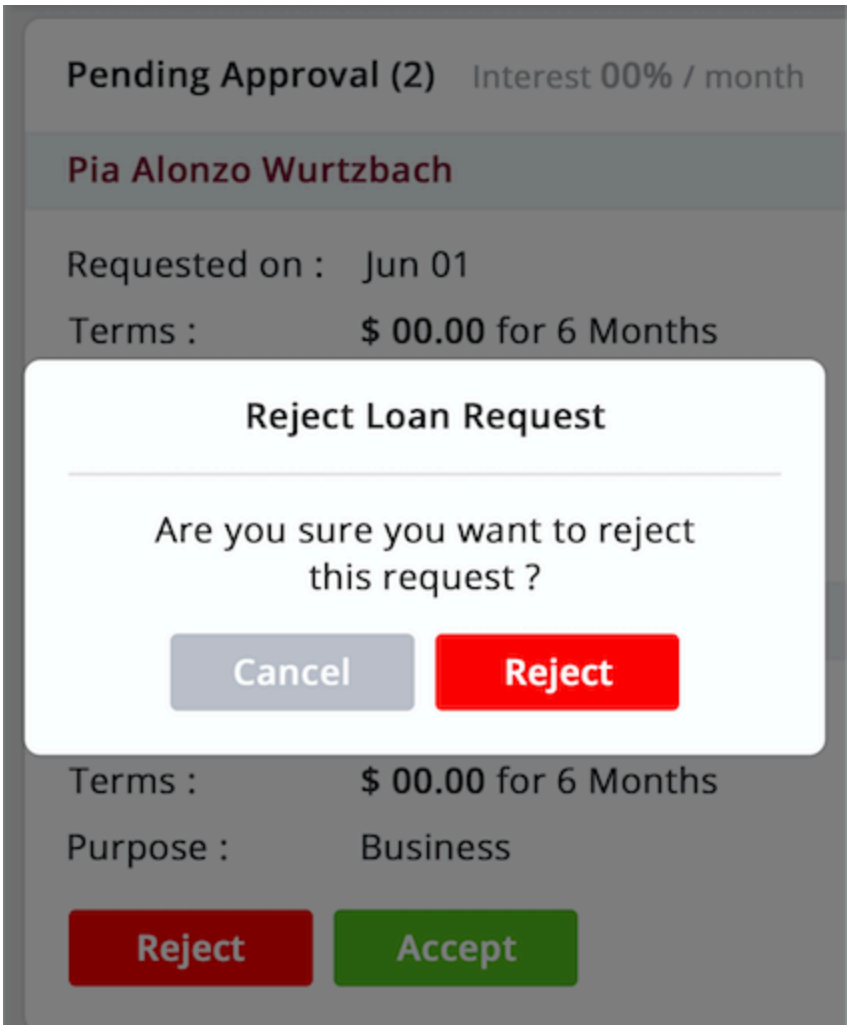
The Other's Loan Requests screen shows the pending loan requests received from other users including

- Name of user requesting the loan

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

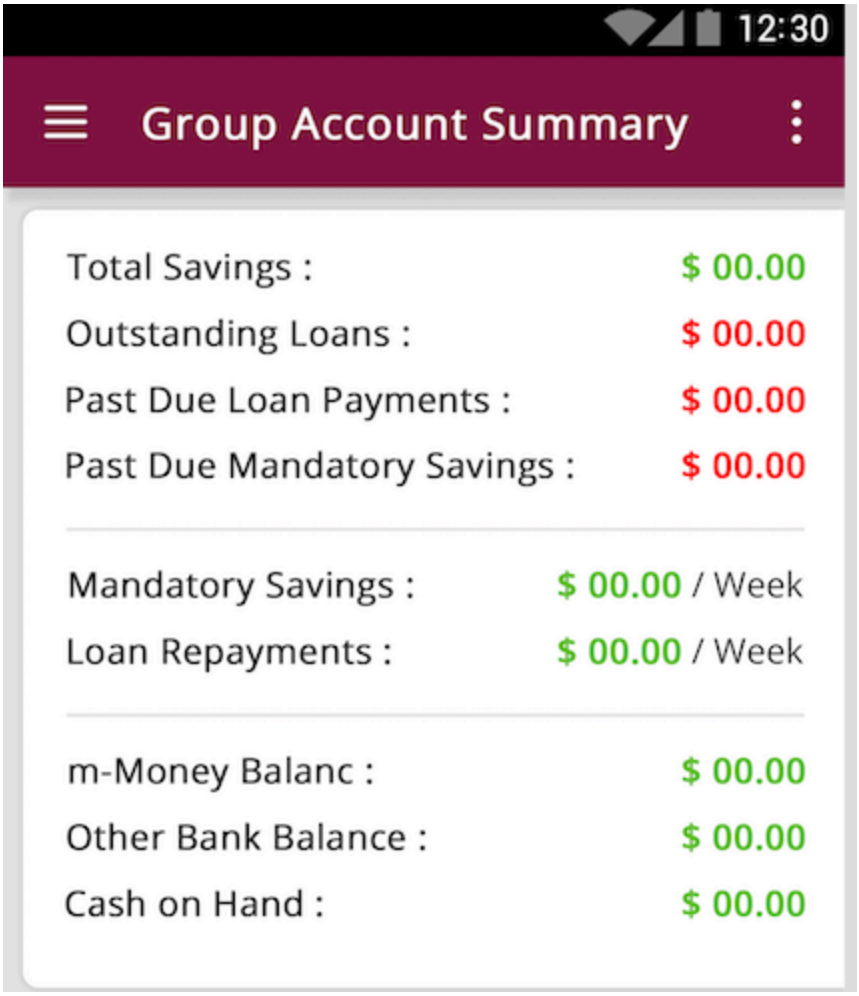


The user has an option to accept or reject each loan request.



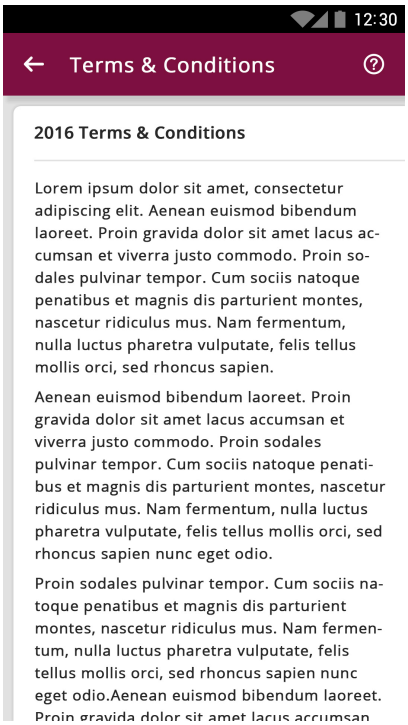
7.14 Standard User - Group Account Summary

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



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

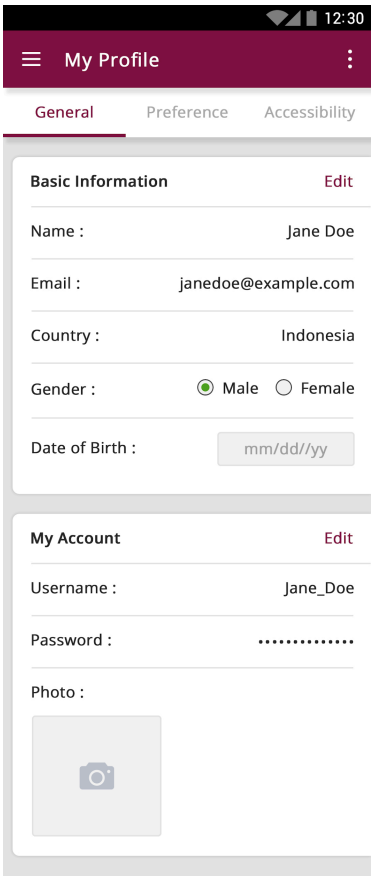
- General
- Preferences
- Accessibility

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

- Photo



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

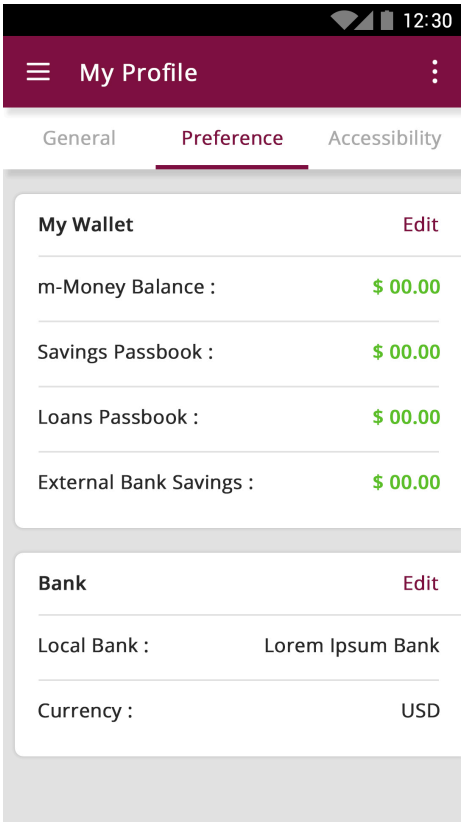
- If the user enters an invalid parameter, an appropriate error message must be shown

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

- External Bank Savings
- Local Bank
- Currency



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

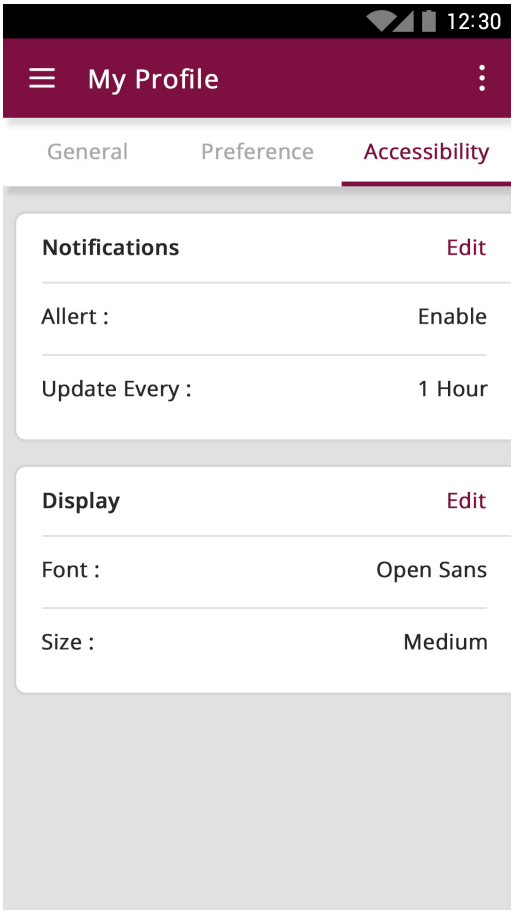
- If the user enters an invalid parameter, an appropriate error message must be shown

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

- Font
- Size



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

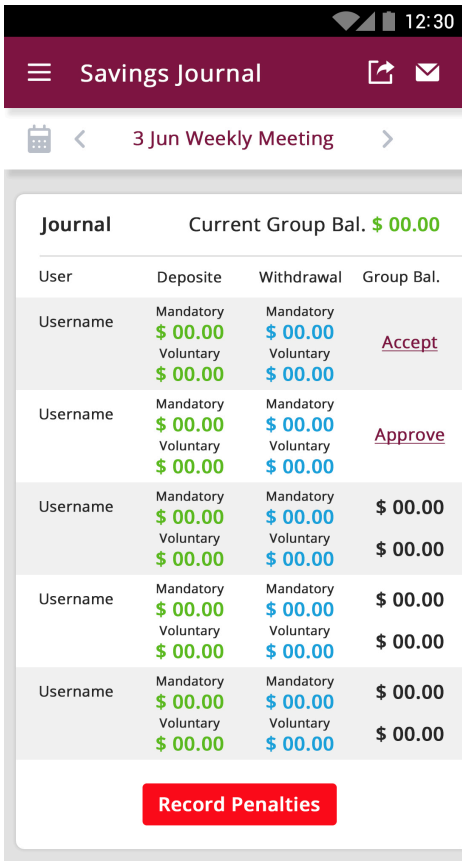
The user can click the ‘Edit’ button in respective sections to update the information. This will toggle the ‘Edit’ button to ‘Save’.

- 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 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"

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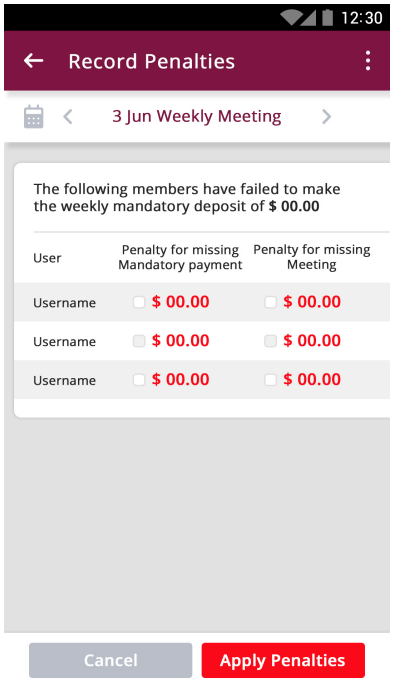
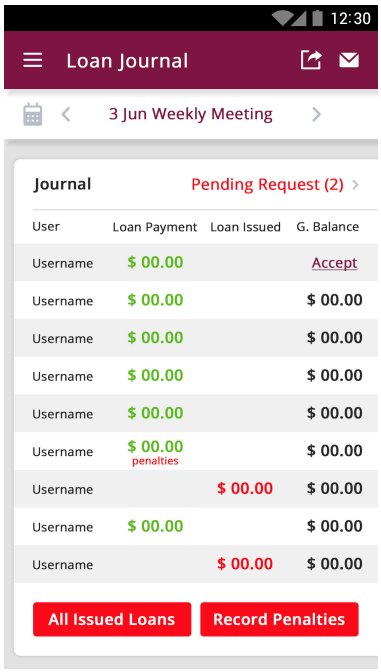
Similarly, the MC user can approve a withdrawal by clicking the Approve button mentioned for user's withdrawal transaction. For the standard user for which withdrawal is accepted, a confirmation message is shown at the bottom of the screen stating "Your WITHDRAWAL of $xx has been recorded"

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'

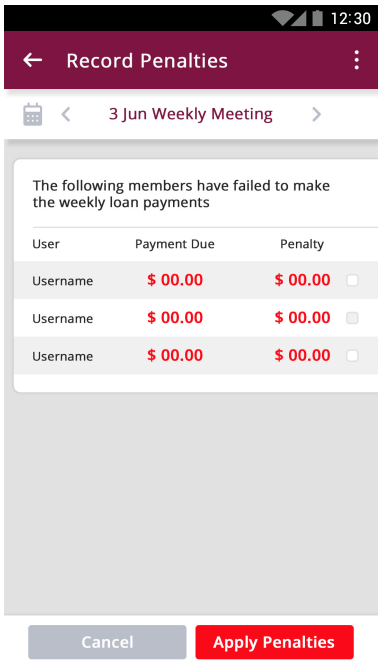


7.18 MC User - Loan Journal

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.



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.



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’.

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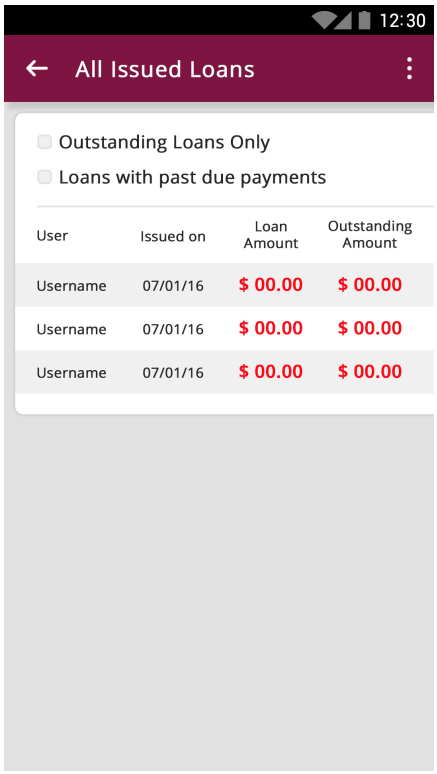
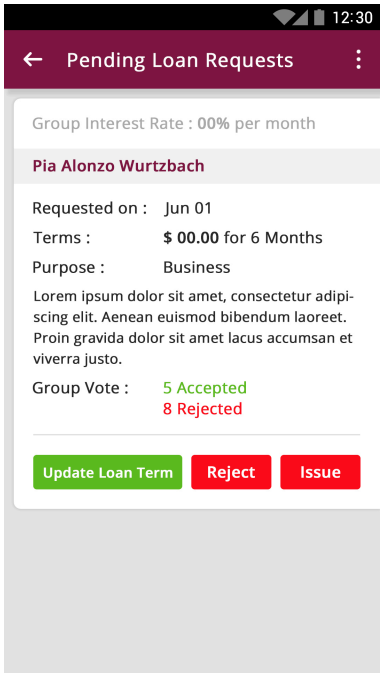


The MC user can view all issued loans as shown above. The loans can also be filtered based on the following criteria

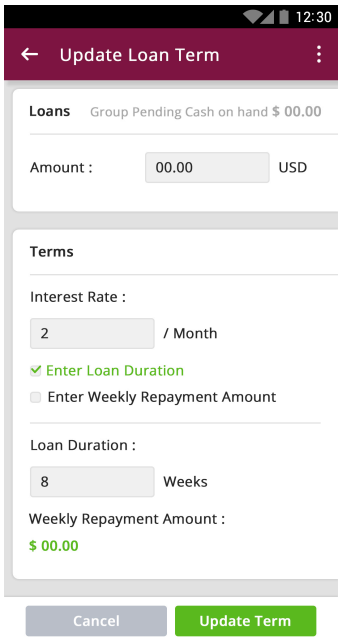
- Outstanding Loans only - This will hide loans which have been paid
- Loans with past due payments - This will show loans with past due payments

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



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

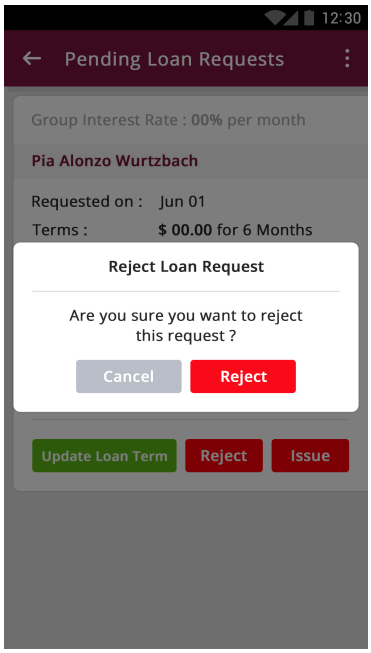
- Update Loan term
- Issue loan (accept loan request)
- Reject loan request



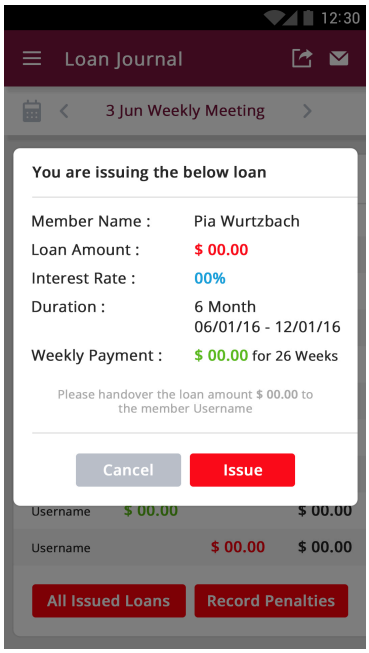
For updating the loan term, the MC user will enter either the Weekly Repayment Amount and the app will create the default Loan Duration (which is what the picture implies); or the MC User will enter the Loan Duration and the app will create the Weekly Repayment Amount. So the User will only enter one 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”

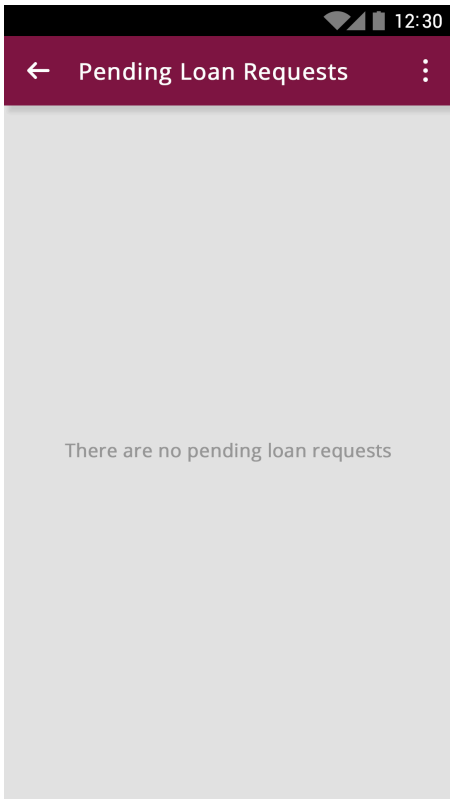
Otherwise, an appropriate error message must be shown.



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”



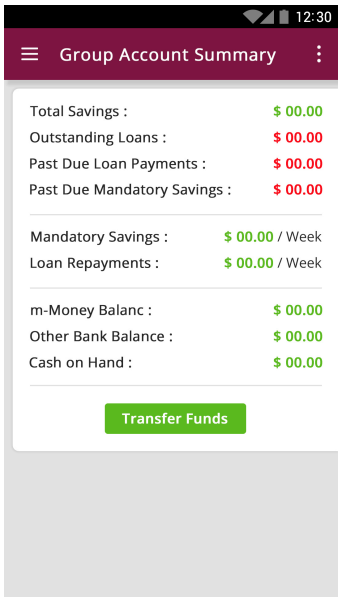
The MC user can approve a loan request. In this case, the loan amount, duration, requesting member, interest rate and weekly payment amount is shown to the MC user so that the loan can be issued. The standard user then receives a notification at the bottom of the screen stating “Your Loan Request has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



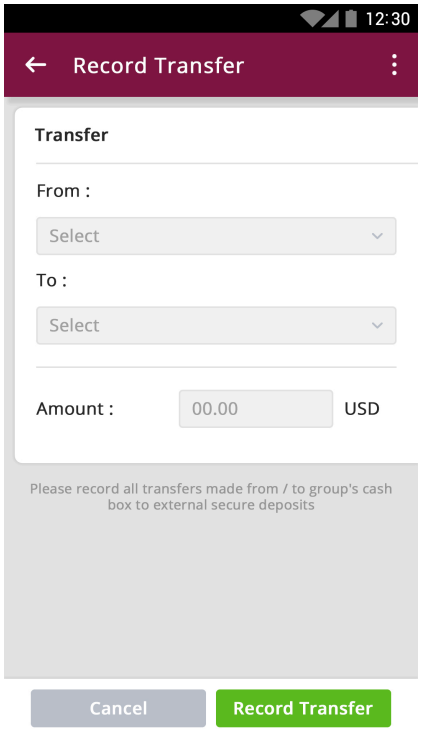
Once the MC user has processed all pending loan requests, a message is shown indicating there are no pending loan requests.

7.19 MC User - Group Account Summary

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



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



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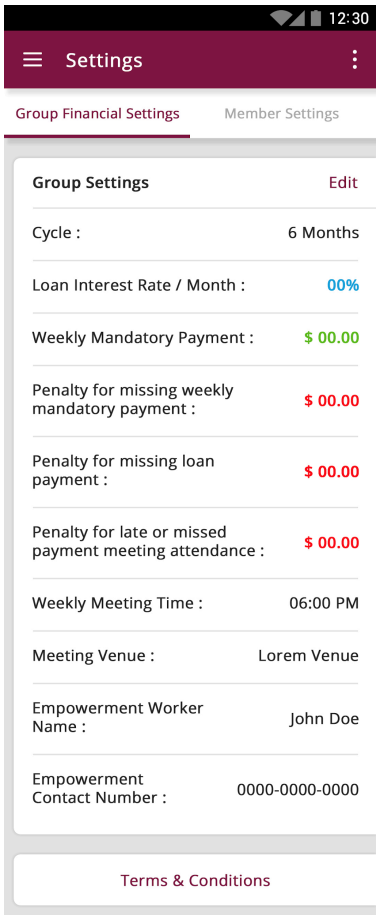
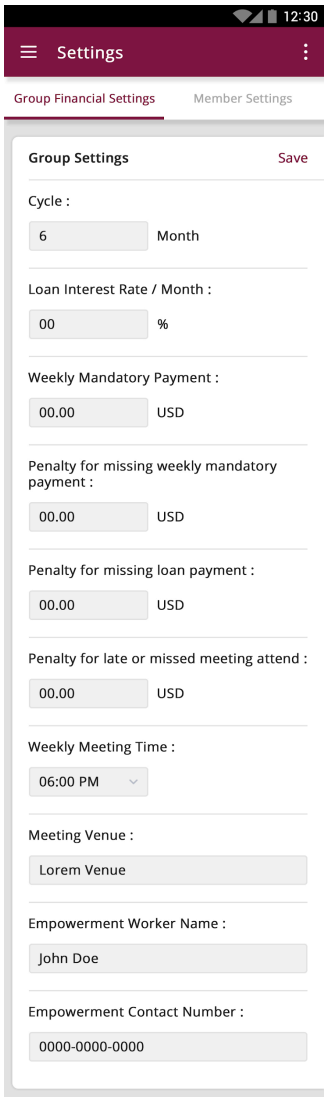
Once the MC user hits ‘Record Transfer’, a confirmation message is shown that the transfer has been completed successfully.

7.20 MC User - Settings

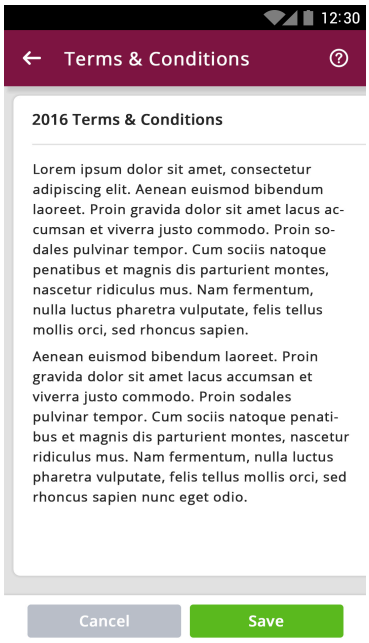
The MC user can configure the following settings for any group.



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



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



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

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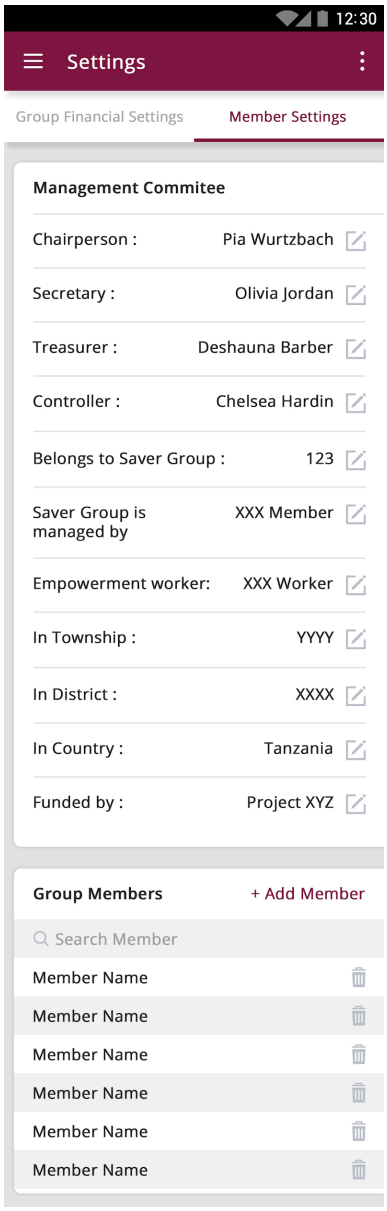
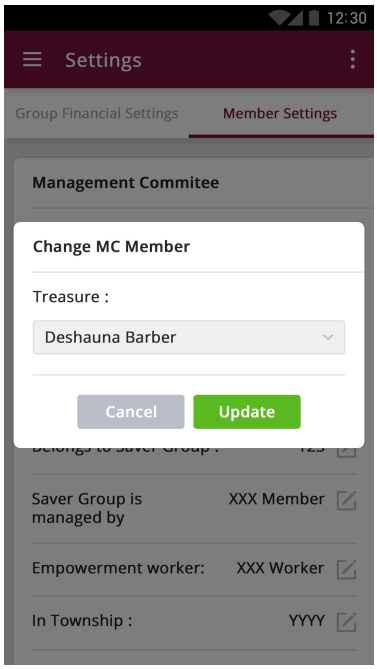
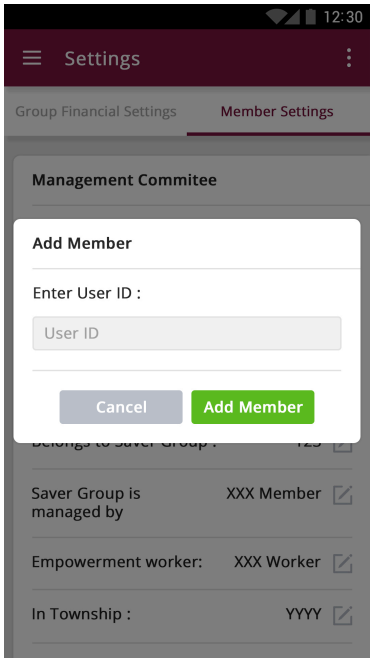


The MC user can change the role of any user. E.g. they can set a new treasurer as shown below.



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



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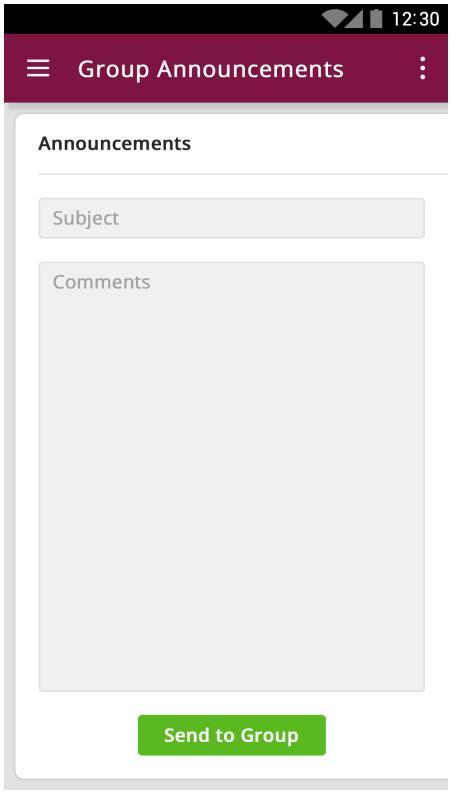
7.21 MC User - Group Announcements

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



7.22 MC User - Group Setup

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

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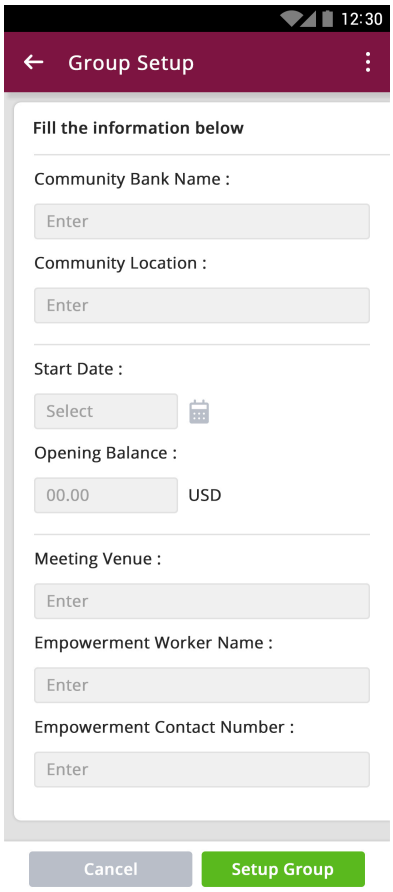
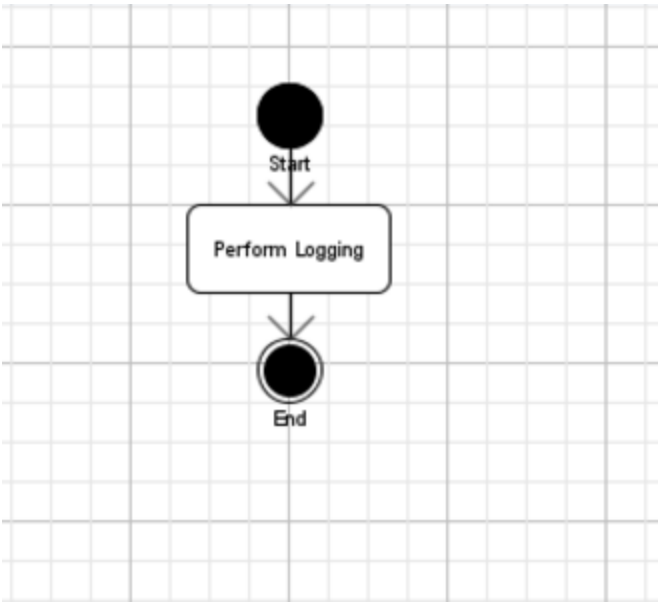


8. Logging Requirements

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

Definitions

Definition	Description
Admin	The user who uses the admin app

Acronyms

Definition	Description
GUI	Graphical User Interface.
MC	Management Committee

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