

Loaning Management System Requirements Specification

Client: Fanders Microfinance Inc.
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Purpose: This document specifies the functional and non-functional requirements for the Loaning Management System (LMS) designed to replace the current Excel-based operations at Fanders Microfinance Inc.

Project Title & Introduction

The **Loaning Management System (LMS) for Fanders Microfinance Inc.** is a comprehensive digital solution intended to streamline loan monitoring, payment processing, and financial reporting. Its primary purpose is to address critical business pain points, including:

- Eliminating calculation errors caused by manual data entry.
- Ensuring data integrity and providing secure, centralized storage.
- Automating the creation of cash blotters and financial statements.

The system will encompass the entire loan lifecycle, from initial application entry and approval to final payment processing and reporting, providing reliable data for management decisions.

Feature-based Sections

1. Authentication & Role-Based Access

Users must authenticate securely to access the system, with access levels strictly determined by their assigned role. This ensures appropriate data access and separation of duties.

Role	Access Level & Key Responsibilities
Administrator	Full System Access (Similar to Super-Admin): Manages user accounts (Managers, Cashiers, Account Officers). Manages system configuration and performs secure backups. Accesses all financial reports and audit trails.
Manager	Oversight and Approval: Reviews and approves loan applications. Accesses all financial reports and analytics. Monitors

	overall cash position and performance.
Cashier	Operational Processing: Processes weekly client payments (UR-002). Processes Loan Release (SLR) documentation (UR-007). Generates the Digital Cash Blotter (UR-004).
Account Officer	Field Operations (Limited Access): Processes collection sheets and client payment entries in the field (UR-006). Views data only for assigned clients.

2. Dashboard Overview

After successful login, users are directed to a role-specific dashboard for real-time visibility into operations:

- **Administrator / Manager Sees:**
 - Total Loan Portfolio Value (Principal + Interest).
 - Total number of Active Loans.
 - Number of Overdue Payments / Clients.
 - Real-time Cash Position (based on Digital Cash Blotter).
 - Alerts for failed backups or system issues.
- **Cashier Sees:**
 - Today's Collections target vs. actual.
 - Pending Loan Releases for the day.
 - Real-time Cash Blotter summary (inflow/outflow).
 - List of payments to be posted.
- **Account Officer Sees:**
 - List of assigned clients with outstanding balances.
 - Weekly Collection targets.
 - Alerts for overdue payments on their assigned accounts.

3. Loan Management

This module replaces the Book Management section and covers the core financial operations:

Create Loan Record (FR-001)

- **Input Fields:** Client Information (Linked to Client Account), Principal Amount, Loan Term (Fixed at 4 months/17 weeks).
- **Processing:** The system generates a unique loan identifier and validates input.
- **Automated Calculations (FR-002, FR-009):**

- **Interest:** Automatically calculated as **Principal** (5% monthly interest over 4 months).
- **Fees:** Fixed Insurance Fee of ₱425.
- **Total Amount Due:** Principal + Interest + Insurance Fee.
- **Payment Schedule Generation (FR-003):** Automatically generates a 17-week schedule by dividing the Total Amount Due by 17.

View & Track Loans (UR-001)

- A comprehensive view of each loan, including the complete 17-week payment schedule, principal, interest, fees, and the running Outstanding Balance (FR-005).
- Status tracking: Loans must progress through states: **Applied Approved Fund Disbursed (Active) Fully Paid (Closed) or Missed Payment (Overdue) Defaulted.**

4. Client Management (Borrowers)

This module handles the non-financial records of Fanders Microfinance Inc. clients.

- **Create Client Account:** Fields must include Full Name, Email Address, Phone Number, and Physical Address.
- **View Client Account:** Displays detailed client information, account status (Active/Inactive), and a comprehensive list of all associated loans, including:
 - Loan Status (Active, Overdue, Closed).
 - Last Payment Date and Amount.
 - Current Outstanding Balance.
- **Update Client Account:** Managers and Administrators can modify profiles. Clients should be able to modify their own non-critical profile information.
- **Deactivate Client:** Client accounts should be deactivated (not deleted) to preserve historical loan and payment records. Deactivated clients cannot submit new loan applications.

5. Transaction Management (Loan Releases & Payments)

The heart of the system, managing the inflow and outflow of funds and ensuring real-time balance updates.

Loan Release (Disbursement) (FR-007)

- Admins/Managers confirm the release of funds to the client.
- **Process:** Records the disbursement, generates the SLR document, and immediately updates the **Digital Cash Blotter** (FR-006) to reflect the cash outflow.

Payment Recording (FR-004)

- Cashiers or Account Officers record weekly client payments.
- **Process:** The system accepts Client ID, payment amount, and date. It validates the payment against the schedule and updates the **Outstanding Balance** in real-time (FR-005).
- **Audit Trail:** Every payment entry must be timestamped and logged to the Transactions

entity (FR-010).

- **Cash Blotter Update:** Payment data is instantly added to the Digital Cash Blotter to reflect cash inflow (FR-006).

Overdue Detection & Alerts (FR-012)

- The system automatically flags an account as **Overdue** if a scheduled payment date is missed.
- **Alerts:** Generates automatic alerts for staff/management for payments that are 1 day overdue and 1 week in advance of the due date.

6. Admin Management (Administrator Only)

The Administrator role provides the highest level of system control and security oversight.

- **Create/Update User (Manager/Cashier/Account Officer):** Manages all non-client user accounts, including role assignment and status (Active/Inactive).
- **Reset Password:** Administrator can trigger a password reset for any user by generating a secure temporary password.
- **Deactivate User:** Non-client user accounts should be deactivated (not permanently deleted) to preserve the accountability of actions logged in the audit trail.
- **Financial Reporting (FR-005):** Accesses all financial reports, including the capability to export transactions and financial statements to PDF and Excel formats.

7. Account Security Features

The system must meet high security and reliability standards:

- **Password Security:** User passwords must be securely hashed (e.g., using Bcrypt) and salted.
- **Session Management:** Implement secure session controls with a period of inactivity leading to automatic logout.
- **Data Integrity:** All financial transactions must maintain 100% accuracy, protected through validation and rollback mechanisms.
- **Audit Logging (FR-010):** The system must log 100% of user activities and data changes to maintain a complete and traceable audit trail.
- **Automated Backup (UR-008):** Daily automated backups of the database to a secure cloud storage location are mandatory.

Database Structure

The underlying data model uses a relational database system (MySQL/PHP) designed for data integrity and efficient transaction processing.

Table Name	Field Name	Data Type	Description
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users	id	INT (11) PK, AI	Unique User ID
	name	VARCHAR(100)	Full name
	email	VARCHAR(100) UNIQUE	Unique email for login
	password	VARCHAR(255)	Hashed password
	role	VARCHAR(20)	User role (Admin, Manager, Cashier, AO)
	status	VARCHAR(20)	Account status (active, inactive)
	created_at	TIMESTAMP	Timestamp created
	updated_at	TIMESTAMP	Timestamp modified
clients	id	INT (11) PK, AI	Unique Client ID
	name	VARCHAR(100)	Full name
	email	VARCHAR(100) UNIQUE	Unique email
	phone_number	VARCHAR(20) UNIQUE	Unique phone number
	address	VARCHAR(255)	Client's residential address
	status	VARCHAR(20)	Client status (active, inactive)
	created_at	TIMESTAMP	Timestamp created
loans	id	INT (11) PK, AI	Unique Loan ID
	client_id	INT (11) FK	Linked to clients.id
	principal	DECIMAL(10, 2)	Original loan

			amount
	interest_rate	DECIMAL(5, 4)	Fixed at 0.05 (5%)
	term_weeks	INT (3)	Fixed at 17 weeks
	total_interest	DECIMAL(10, 2)	Calculated total interest
	insurance_fee	DECIMAL(10, 2)	Fixed at 425.00
	total_loan_amount	DECIMAL(10, 2)	Principal + Interest + Fee
	status	VARCHAR(20)	Loan status (Active, Overdue, Closed)
	start_date	TIMESTAMP	Date of fund disbursement
	created_at	TIMESTAMP	Timestamp created
payments	id	INT (11) PK, AI	Unique Payment ID
	loan_id	INT (11) FK	Linked to loans.id
	user_id	INT (11) FK	Cashier/AO who recorded payment
	amount	DECIMAL(10, 2)	Amount paid
	payment_date	TIMESTAMP	Date payment was recorded
	created_at	TIMESTAMP	Timestamp created
cash_blotter	id	INT (11) PK, AI	Unique Blotter ID
	blotter_date	DATE UNIQUE	Date of the cash blotter entry
	total_inflow	DECIMAL(10, 2)	Sum of all collections and inflows

	total_outflow	DECIMAL(10, 2)	Sum of all loan releases and outflows
	calculated_balance	DECIMAL(10, 2)	Daily net cash position
transactions	id	INT (11) PK, AI	Unique Audit Log ID
	user_id	INT (11) FK	User who performed the action
	transaction_type	VARCHAR(50)	Type of action (e.g., PAYMENT_RECORD ED, LOAN_CREATED)
	reference_id	INT (11)	ID of the affected record (loan, payment, client)
	details	TEXT	JSON string of changes made
	created_at	TIMESTAMP	Timestamp of the action