# 🌟 Micro-Finance Loan Management CRM

A Salesforce Admin + Developer Implementation

## 🕵️‍♂️ Phase 1 – Problem Understanding & Industry Analysis

* Requirement Gathering: Interview loan officers, branch managers, finance team to capture needs like instant loan approvals, repayment reminders, and delinquency tracking.
* Stakeholder Analysis:  
   - Primary: Borrowers, Loan Officers, Finance Managers.  
   - Secondary: Credit Analysts, Field Agents, Regulatory Auditors.
* Business Process Mapping: From Application → Approval → Disbursement → Repayment → Closure visualized in Lucidchart.
* Industry-specific Use Case Analysis: Study micro-finance lending cycles, RBI/NBFC compliance, common challenges (group loans, small-ticket EMIs).
* AppExchange Exploration: Evaluate packages like “Financial Services Cloud” or “Loan Management” accelerators for inspiration.

## 🏗️ Phase 2 – Org Setup & Configuration

* Salesforce Edition: Developer Edition (Free).
* Company Profile Setup: Set micro-finance org name, currency, time zone.
* Business Hours & Holidays: Configure loan-repayment working days.
* Fiscal Year Settings: Align to quarterly lending cycles.
* User Setup & Licenses: Create users for Loan Officers, Finance, Admins.
* Profiles & Roles:  
   - Profiles: Loan Officer (standard user), Finance Manager (custom).  
   - Roles: Branch Officer → Branch Manager → Head Office.
* Permission Sets: Extra rights for credit analysts (bulk data import, reporting).
* OWD & Sharing Rules: Private for Loans & Payments; branch-based sharing.
* Login Access Policies: Two-factor login for Finance roles.
* Dev Org Setup: Enable Lightning, add sample data.
* Sandbox Usage: Create a sandbox for testing automation.
* Deployment Basics: Prepare for Change Sets or SFDX.

## 🗂️ Phase 3 – Data Modeling & Relationships

* Standard & Custom Objects:  
   - Standard: Contact (re-used as Customer).  
   - Custom: Loan Application, Loan Account, Repayment Schedule, Payment, Collateral.
* Fields: Amount, Tenure, Interest Rate, Status, ID Proof, Credit Score.
* Record Types: Differentiate Personal Loan vs Group Loan.
* Page & Compact Layouts: Quick view of balance, EMI schedule.
* Schema Builder: Visualize relationships.
* Relationships:  
   - Customer ↔ Loan Applications (Master–Detail).  
   - Loan Application ↔ Loan Account (1–1).  
   - Loan Account ↔ Repayment Schedule (1–M).  
   - Repayment Schedule ↔ Payment (1–M).  
   - Collateral (Lookup to Loan Application).
* Junction Objects: For group loans linking many customers to one loan.
* External Objects: Optional credit-bureau data.

## 🤖 Phase 4 – Process Automation (Admin)

* Validation Rules:  
   - Interest Rate > 0.  
   - Disbursed ≤ Approved.
* Workflow Rules: Notify officer if application pending >48 hrs.
* Process Builder: Auto-update Loan Account status when fully paid.
* Approval Process: Loans > ₹5 lakh require Finance Manager approval.
* Flow Builder:  
   - Record-Triggered: On approval, auto-create Loan Account & repayment schedules.  
   - Scheduled: Send reminders 3 days before EMI due.  
   - Screen Flow: Guided Loan Application intake.
* Email Alerts / Field Updates / Tasks / Custom Notifications: SMS + email to customers for payment reminders and approval notices.

## 💻 Phase 5 – Apex Programming (Developer)

* Classes & Objects: LoanCalculator.cls, RepaymentScheduler.cls.
* Apex Triggers:  
   - After insert on Loan Application → create repayment schedule.  
   - Before delete on Customer → block if active loans exist.
* Trigger Design Pattern: Handler class for scalability.
* SOQL & SOSL: Fetch overdue EMIs, search customer loans.
* Collections (List, Set, Map): Manage installment batches.
* Control Statements: Loop through schedules to update penalties.
* Batch Apex: Nightly overdue/penalty updates.
* Queueable Apex: Bulk SMS/email reminders.
* Scheduled Apex: Monthly summary to management.
* Future Methods: Async credit score fetch.
* Exception Handling: Log failed API or payment updates.
* Test Classes: ≥75 % coverage for deployment.
* Asynchronous Processing: Handle high-volume repayments.

## 🎨 Phase 6 – User Interface Development

* Lightning App Builder: Build LoanSphere app with tabs: Customers, Loan Applications, Loan Accounts, Repayments, Payments.
* Record Pages:  
   - Customer 360 view with credit info and active loans.  
   - Loan Account timeline with repayment history.
* Tabs & Home Page Layouts: Quick metrics: total disbursed, overdue loans.
* Utility Bar: One-click “New Loan Application” or “Collect Payment.”
* LWC (Lightning Web Components):  
   - EMI Calculator slider component.  
   - Repayment Calendar heat map.
* Apex with LWC: Imperative calls for dynamic EMI calculations.
* Events in LWC / Wire Adapters / Navigation Service: Live updates & smooth navigation.

## 🌐 Phase 7 – Integration & External Access

* Named Credentials: Secure integration with Payment Gateway.
* External Services: Credit Bureau score service.
* Web Services (REST/SOAP): Payment posting, credit verification.
* Callouts: Trigger payment confirmation API.
* Platform Events: Notify branch officers of large disbursements.
* Change Data Capture: Sync data to an external analytics warehouse.
* Salesforce Connect: Optional read-only access to bank systems.
* API Limits: Monitor for heavy repayment traffic.
* OAuth & Authentication: Secure borrower self-service portal.
* Remote Site Settings: Allow outbound API calls.

## 🗄️ Phase 8 – Data Management & Deployment

* Data Import Wizard / Data Loader: Migrate customers, applications, payments.
* Duplicate Rules: Prevent duplicate customer IDs or mobile numbers.
* Data Export & Backup: Weekly automated export.
* Change Sets: Move customizations to production.
* Unmanaged vs Managed Packages: Package reusable components.
* ANT Migration Tool & VS Code/SFDX: Version control & CI/CD.

## 📊 Phase 9 – Reporting, Dashboards & Security Review

* Reports:  
   - Loan Disbursement by Branch & Month.  
   - Collection vs. Schedule.  
   - Overdue Loans Aging.  
   - Officer Productivity.
* Report Types: Custom for Loan-Repayment hierarchy.
* Dashboards:  
   - Portfolio Outstanding Gauge.  
   - Interest Revenue Trend.  
   - Delinquency Heat Map.
* Dynamic Dashboards: Branch Manager sees only their branch data.
* Sharing Settings: Fine-grained access to sensitive financial info.
* Field Level Security: Protect ID proof & income data.
* Session Settings & Login IP Ranges: Extra security.
* Audit Trail: Track changes to key records.

## 🎬 Phase 10 – Final Presentation & Demo Day

* Pitch Presentation: “From Paper Chaos to Digital Micro-Finance Engine.”
* Demo Walkthrough:  
   1. Borrower submits loan application online.  
   2. Officer approves, repayment schedule auto-creates.  
   3. Payment posted, dashboards update live.
* Handoff Documentation: ERD, user manual, test plan.
* LinkedIn/Portfolio Showcase: Screenshots, demo video, GitHub metadata.

Project Type: Salesforce CRM Implementation – Financial Services | Micro-Finance | B2C

Target Users: Borrowers, Loan Officers, Branch Managers, Finance/Admin Teams.