

PAWNPRIME

GOLD & SILVER LOAN MANAGEMENT SYSTEM

Minor Project Report | Bachelor of Engineering (CSE)

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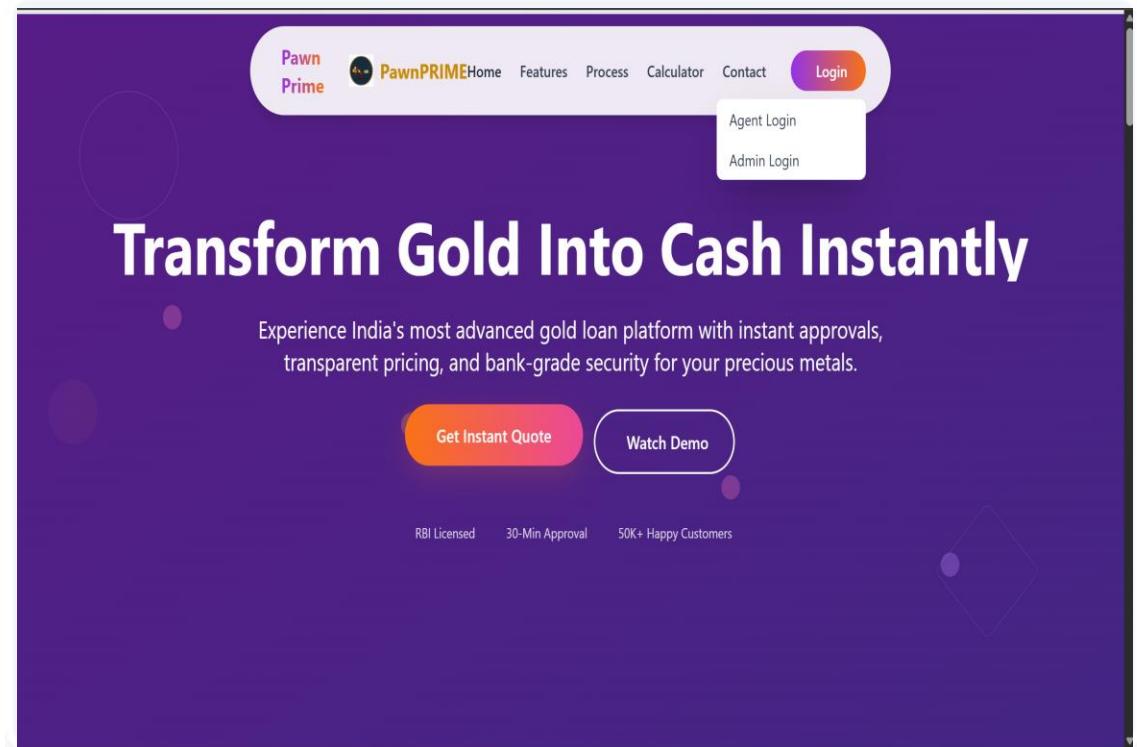
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INTRODUCTION

PawnPrime is a full-stack web application designed to digitalize and streamline the entire lifecycle of precious-metal-backed lending.

- ✓ Automates customer onboarding & valuation.
- ✓ Generates EMI schedules & tracks repayments.
- ✓ Secure, fast, and centralized system.
- ✓ Built with Spring Boot, React, & PostgreSQL.



PROJECT OVERVIEW



FULL-STACK SYSTEM

End-to-end automation from onboarding to loan closure.



ROBUST BACKEND

Spring Boot & PostgreSQL ensuring data integrity and security.



KEY INTEGRATIONS

Razorpay, Twilio, Cloudinary, and MetalPriceAPI.

OBJECTIVES

PRIMARY GOALS

- ✓ Automate entire loan workflow.
- ✓ Real-time valuation using live market prices.
- ✓ Role-based secure authentication.

OPERATIONAL GOALS

- ✓ Online & offline repayment tracking.
- ✓ Generate Receipts, NOC, and Closure PDFs.
- ✓ Centralized dashboard for analytics.

EXISTING SYSTEM ISSUES



MANUAL PROCESS

Reliance on physical registers leads to errors and data loss.



INCONSISTENT VALUATION

Lack of standardized pricing sources causes valuation disputes.

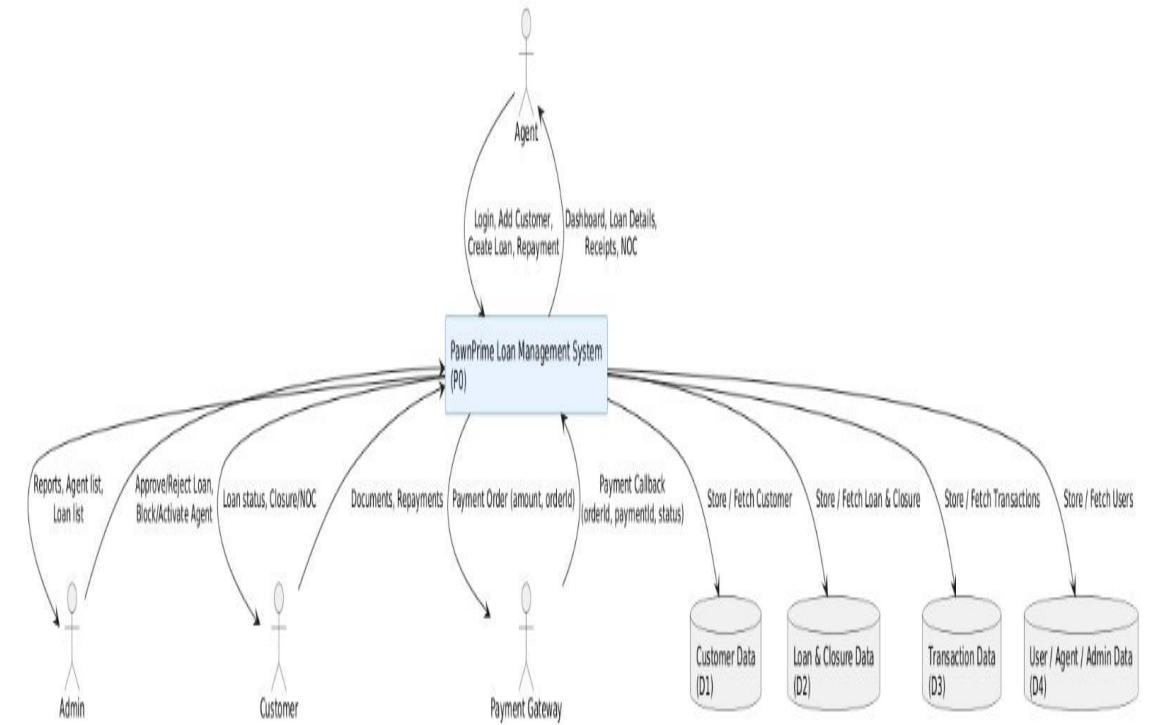


SECURITY RISKS

Absence of role-based access and OTP verification.

SYSTEM ARCHITECTURE

- ✓ **Presentation Layer:** React, REST APIs.
- ✓ **Business Layer:** Services, Rules, Workflows.
- ✓ **Data Layer:** JPA, PostgreSQL.
- ✓ **Integration Layer:** Razorpay, Twilio, Cloudinary.



TECHNOLOGY STACK



JAVA 17

Core Backend Logic



REACT JS

Frontend Interface



POSTGRESQL

Relational Database



JWT

Secure Auth

KEY FEATURES

REAL-TIME VALUATION

Live Gold/Silver rates via API integration.



ONLINE REPAYMENT

Seamless Razorpay integration for digital payments.



PDF GENERATION

Auto-generate Receipts, NOCs, and Statements.

SYSTEM MODULES

Module	Functionality
Admin Module	Manage agents, approve loans, view analytics, generate closure docs.
Agent Module	Onboard customers, valuation, loan creation, process repayments.
Repayment Module	Handle offline cash and online digital payments with receipt generation.



↳ Overview ⚙ Agents ⚙ Clients ⚙ Loans ⚡ Risk ⌂ Request ⚒ Transactions

Total Loan Amount

₹2.5M

18 loans

Active Clients

1

Total customers

Pending Applications

1

Needs review

Recovery Rate

0.0%

Completed loans

ADMIN MODULE

The central command center for managing the lending ecosystem.

- ✓ Manage Agents (Block/Unblock).
- ✓ Approve/Reject Loan Requests.
- ✓ View Portfolio Analytics.
- ✓ Monitor Transactions.

System Snapshot

Real-time system metrics

⟳ Refresh KPIs

Admins

1

Total Agents

1

Active Agents

1

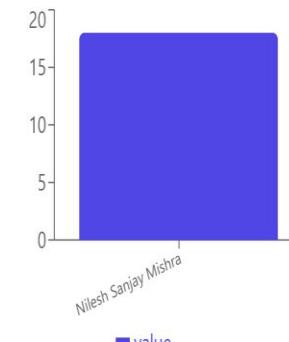
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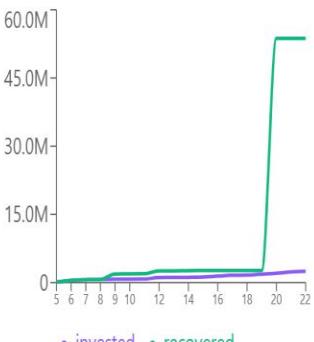


Loan Analytics Overview

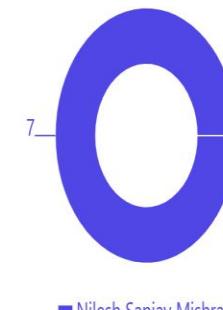
● Loans per Agent



● Cumulative Invested vs Recovered



● Approved Loans by Agent





Pawn Prime

Precious Metals Lending Platform

Last updated: 10:44:12 PM

Refresh

Agent Agent

AGENT MODULE: CUSTOMER ONBOARDING

EFFICIENT ONBOARDING

Agents can quickly register new customers with integrated KYC features.

- ✓ OCR extraction from Aadhaar cards.
- ✓ Upload KYC documents to Cloudinary.
- ✓ OTP verification for secure registration.



Pawn Prime

Precious Metals Lending Platform

Overview

Loans

Clients

Calculator

Risk Management

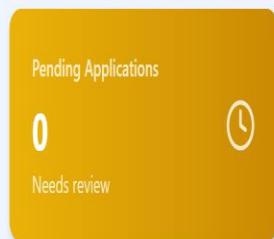
EMI Calculator

Transactions

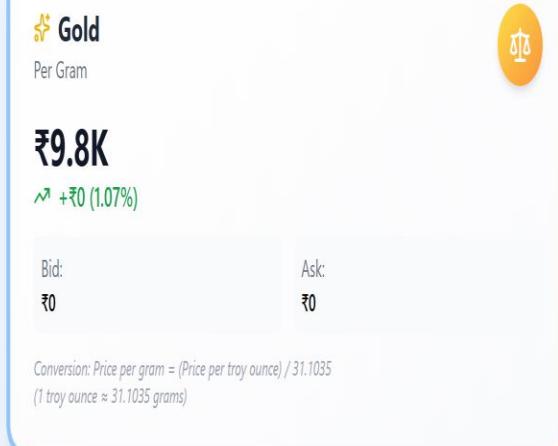
Repayment

Quick Stats

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Live Metal Prices



VALUATION & LOAN CREATION

AUTOMATED VALUATION

The system calculates loan eligibility instantly based on purity and weight.

- ✓ Fetches live metal prices.
- ✓ Calculates Net Grams & Purity.
- ✓ Determines Max Loan Amount.
- ✓ Configurable Interest Rates.

The screenshot shows a mobile application interface for a loan calculator. At the top, there is a small thumbnail image of a gold ornament with the number '46.80' next to it. Below this is a section titled 'Loan Details'.

Loan Calculator

Ornament Value: ₹ 2,80,800

Loan Value (max 80% of Ornament Value): 1,50,000

Loan Percentage: 53.42 %

Loan at 80%: ₹ 2,24,640.00

Final Loan Value: ₹ 1,50,000.00

Duration (months) Min: 1 month, Max: 120 months (10 years): 12

Interest Rate (%) Range: 0-4%: 2

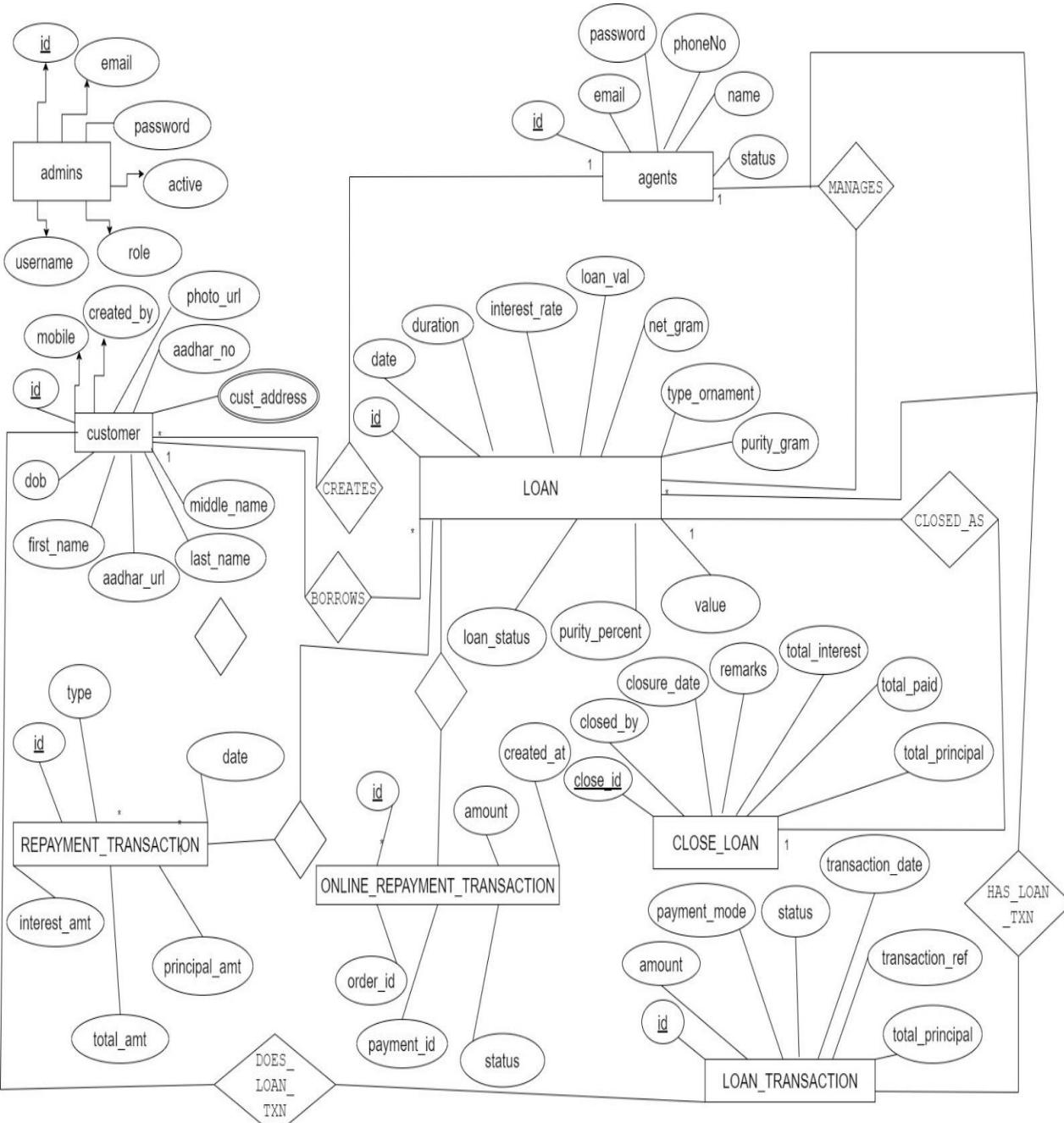
Loan Value: ₹150,000 **Total Payable:** ₹153,000

Apply for Loan

DATABASE DESIGN

NORMALIZED SCHEMA (3NF)

- ✓ **Entities:** Customer, Agent, Loan, Transaction.
- ✓ **Integrity:** Foreign keys maintain relationships.
- ✓ **Optimization:** Indexed for fast retrieval.
- ✓ **Audit:** Timestamps for all records.



INTEGRATION LAYER



GEMINI API

OCR Data Extraction



RAZORPAY

Payment Gateway



CLOUDINARY

Document Storage



METALPRICEAPI

Live Market Rates

REPAYMENT WORKFLOW

FLEXIBLE PAYMENTS

Support for both offline cash collections and online digital payments.

- ✓ **Offline:** Agent enters cash payment details.
- ✓ **Online:** Customer pays via Razorpay link.
- ✓ Auto-balance update upon confirmation.

The screenshot shows the Pawn Prime software interface. At the top, there's a header bar with the title "Pawn Prime" and "Metals Lending Platform". It includes navigation tabs like "Loans", "Clients", "Calculator", "Risk Management", "EMI Calculator", "Transactions", and "Repayment". The main area displays a loan record for "Nilesh Sanjay Mishra" with details such as "Loan ID: 20", "Date: 2025-10-11", "Status: T_DONE", "Name: Nilesh Sanjay Mishra", "ID: 1", "Agent ID: 1", "Type: Gold", "Net Weight: 60g", and "Purity: 89%". Below this, a modal window titled "Payment Options" is open. It shows a "Price Summary" of ₹34,000 and a "Using as +91 84608 05733" button. The modal is divided into sections: "Recommended", "UPI QR", "UPI", "Cards", "Netbanking", "Wallet", and "Pay Later". Each section contains icons for various payment methods. A QR code is displayed under the "UPI QR" section with the instruction "Scan the QR using any UPI App". At the bottom of the modal, there's a note: "By proceeding, I agree to Razorpay's Privacy Notice • Edit Preferences". The background of the main screen shows a table with columns: 12, 2026-10-11, 16666.67, 333.33, 17000, 0, and a status column with "Pending". At the bottom, there are buttons for "₹ Pay Selected (2)" and "Close Loan".

UI/UX HIGHLIGHTS: RECEIPTS

AUTOMATED DOCUMENTATION

Every transaction triggers the generation of a professional, verifiable receipt.

- ✓ Instant PDF generation.
- ✓ Includes Transaction ID & Date.
- ✓ Breakdown of Principal & Interest.
- ✓ Downloadable and printable.

PawnPrime

Loan Receipt

Receipt Date
25/11/2025
Receipt No.
22

Loan Information

Loan ID:	22	Status:	T_DONE
Loan Date:	25/11/2025	Loan Value:	150,000.00
Interest Rate:	2.0%	Duration:	12 months

Ornament Details

Type:	Gold	Net Weight:	60.0g
Purity:	78.0%	Value:	280,800.00

Repayment Schedule

#	Date	Principal	Interest	Installment	Remaining
1	25/12/2025	12,500.00	250.00	12,750.00	140,250.00
2	25/01/2026	12,500.00	250.00	12,750.00	127,500.00
3	25/02/2026	12,500.00	250.00	12,750.00	114,750.00
4	25/03/2026	12,500.00	250.00	12,750.00	102,000.00
5	25/04/2026	12,500.00	250.00	12,750.00	89,250.00
6	25/05/2026	12,500.00	250.00	12,750.00	76,500.00
7	25/06/2026	12,500.00	250.00	12,750.00	63,750.00
8	25/07/2026	12,500.00	250.00	12,750.00	51,000.00

IMPLEMENTATION & TESTING

METHODOLOGY

- ✓ Agile Development with 2-week sprints.
- ✓ CI/CD pipelines with automated builds.
- ✓ Feature-branch Git workflow.

TESTING STRATEGY

- ✓ **Unit:** JUnit 5 & Mockito.
- ✓ **Integration:** Postman for API testing.
- ✓ **Security:** SQL Injection & Token checks.
- ✓ **UAT:** Verified by Admin/Agent users.

FUTURE SCOPE



AI SCORING

Predict credit risk and default probability.



MOBILE APP

Native iOS/Android app for field agents.



BIOMETRICS

Fingerprint login for enhanced security.



BLOCKCHAIN

Immutable ledger for transaction history.

CONCLUSION

DIGITAL TRANSFORMATION ACHIEVED

PawnPrime successfully transforms manual lending into a secure, digital ecosystem.

By integrating automation, real-time data, and robust security, the system significantly enhances operational efficiency, transparency, and compliance for gold loan institutions.

Thank You

Questions & Answers