

# Nexarge Services Pvt. Ltd.

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## Project Name: SaaS Base – Automated Access Control with Recharge System

### 1. Problem of Statement:

Most current SaaS loan origination systems still use **manual or fixed subscription models**. This leads to:

- **Slow activation/deactivation** — delays in starting or stopping services.
- **Billing disputes** — caused by delays, manual errors, or unclear usage tracking.
- **Poor scalability** — same pricing and flow for DSAs, NBFCs, and Co-op Banks, despite differing needs.

### Goal:

A fully automated **hybrid prepaid + subscription** system where access is **instantly granted or blocked** based on payment status — **zero manual intervention**.

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### 2. Monetization Models

#### Pay-Per-Form Model:

User Type	Rate (₹/form)	Features
Just Loan Form	5	Basic form processing
Loan Form with Realtime Validation	50	Aadhaar, PAN, bank details

- **No fixed monthly cost** — wallet balance decreases per processed form.
  - Wallet recharge via Razorpay one-time payments.
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## 3. System Flow

1. **User Login** → JWT authentication.
2. **Access Middleware:**
  - **Subscription** → Validate valid until date.
  - **Prepaid** → Check wallet balance  $\geq$  per-form rate.
3. **Loan Form Submission:**
  - Store application in DB.
  - If prepaid → deduct from wallet **atomically**.
4. **Payment Initiation** → Razorpay Checkout (subscription or prepaid recharge).
5. **Webhook Listener:**
  - Verify Razorpay signature.
  - Update wallet balance or subscription validity instantly.
6. **Automated Alerts:**
  - Cron/queue checks for low balance or expiry.
  - Send MSG91 SMS/WhatsApp/email notifications.
7. **Access Control:**
  - Block submissions when balance is 0 or subscription expired.

## 4. Database Schema

### users

- user\_id (PK)
- name
- email
- role (DSA, NBFC, Co-op)
- status (active, blocked)
- created\_at
- updated\_at

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## wallets

- wallet\_id (PK)
- user\_id (FK)
- balance (decimal)
- valid\_until (date)
- status (active, expired)
- updated\_at

## transactions

- txn\_id (PK)
- user\_id (FK)
- amount (decimal)
- type (credit, debit)
- payment\_mode (razorpay)
- txn\_ref
- date

## applications

- app\_id (PK)
- user\_id (FK)
- status (pending, approved, rejected)
- submitted\_at

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## notifications

- notif\_id (PK)
- user\_id (FK)
- channel (sms, whatsapp, email)
- message\_type (expiry\_alert, low\_balance, payment\_success)
- status (sent, failed)
- created\_at

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## 5. Key Technical Features

- **Razorpay Webhook Integration or API** → Instant payment confirmation & account updates.
- **If Manual Payment done, (need to update option basis on transaction Id)**
- **MSG91 Integration** → OTP login, expiry & low balance alerts, payment confirmations.
- **Access Middleware** → Validates wallet/subscription before allowing submissions.
- **RBAC** → Role-specific features
- **Cron Scheduler / Event Queue** → Status checks & notifications.
- **Billing, Reports as well Invoicing**
- **Help and Support Desk**
- **AWS Hosting:**
  - EC2 → Backend API.
  - S3 → Document storage.
- **Security:**
  - JWT tokens for auth.
  - RBAC for feature gating.
  - HMAC verification for webhooks.

## 6. Development Timeline

Phase	Hours
Requirement Analysis & Flow	10–14
UI/UX Design	12–18
Backend API	20–35
DB Setup & Optimization	10–15
Razorpay Integration	12–15
MSG91 Integration	06–10
Auto-Recharge & Middleware Logic	15–16
Billing & Invoicing Flow	10–15
Testing & QA	15–20
Deployment & Monitoring	10–12
<b>Total</b>	<b>120–170 hrs</b>

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## 7. Automation Benefits

- **Instant activation/deactivation** — no manual handling.
- **Real-time alerts** to avoid disruption.
- **Scalable architecture** ready for new integrations (credit bureaus, fraud detection)

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