REWARDS & INCENTIVES MODULE

Browser-Based | Cloud-Native | Solana-Integrated (for PoX & Token Rewards) | Dashboard-Embedded

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I. 🎯 Purpose

To deliver a modular, browser-native **Rewards & Incentives Engine** within the Per Diem dashboard, empowering merchants to trigger, manage, and scale loyalty programs across diverse verticals using the CRM systems native to their existing POS platforms.

The module is designed to operate across:

- **Retail**: Token-based spend tiers, NFT-based collectibles and bonuses

- **Food Service**: Visit-based rewards, limited-time offer drops

- **Hospitality**: Token redemption for upgrades, PoX check-in campaigns

- **Health & Beauty**: Visit milestone perks, seasonal NFT gift programs

- **Appointment-Based Sectors**: Loyalty incentives triggered by completed services

The system will leverage **Solana blockchain** for reward delivery and Proof-of-Experience (PoX) badge minting, while syncing with CRM data surfaced from the POS wrapper.

II. 🧱 Core Features

1. Reward Trigger Engine

- Rule-based automation: visit count, spend thresholds, day/time

- Campaigns configured by tag/segment (POS-driven)

- Instant rewards: NFTs, token airdrops, or redeemable links

2. Campaign Builder

- Schedule-based campaign planning

- Connect rules to reward types (NFT, discount, token bonus)

- Link to QR triggers (for signage, menus, or booking receipts)

3. NFT & Token Reward Delivery

- Mint Proof-of-Experience (PoX) NFTs tied to specific interactions

- Reward wallet holders with Solana-native tokens ($PER, $GRUB, etc.)

- Link badge or token to perks: free service, exclusive access, or collectibles

4. POS CRM Integration

- No internal CRM layer

- Reward logic maps to POS-provided customer IDs or tags

- Webhook/SDK-based triggers for visit completion, spend events, or service milestones

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III. 🔗 Solana Blockchain Integration (Optional)

All blockchain logic is modular and optional. POS-only users operate seamlessly without token features.

A. PoX NFT Minting

- QR or NFC triggers embedded in signage, receipts, or booking confirmations

- NFTs minted via Metaplex Bubblegum on Solana

- Common formats: "10th visit badge", "Dinner Series NFT", "Stay & Earn Collectible"

B. Tokenized Incentives

- Smart contract reward drops via wallet connection or POS event

- Use of SPL tokens: $GRUB (food), $LODGE (hospitality), $PER (general rewards)

- Auto-redemption or burn-for-perk logic available

IV. 🧩 Application Architecture

Layer	Description
Frontend	React.js UI embedded in merchant dashboard
Backend	Node.js with REST/GraphQL for reward logic
Blockchain	Anchor smart contracts on Solana
NFT Engine	Bubblegum cNFTs, metadata indexing via Helius
Wallet Support	Phantom, Solflare, Backpack
Infra	AWS or GCP deploy, Cloudflare CDN, Redis cache

V. 🛠️ POS Integration & Extensibility

- **POS Wrapper SDK**:
  - Listen to POS events (transaction complete, appointment checked-in, etc.)

- Trigger reward logic through shared APIs

- Link rewards to customer IDs from the POS system

- **Wrapper Compatibility**:

  - Toast, Square, Clover, Lightspeed, Shopify, MindBody

- **No Local CRM Duplication**:

  - All customer segmentation logic, tagging, and booking data pulled from POS

  - Dashboard UI references POS-originated customer records

VI. 🧠 Optional Smart Features

- Reward rarity variation: random chance NFT drops

- Time-based bonus logic (e.g., "Happy Hour Badge")

- Burn-to-unlock perks (NFT becomes coupon/upgrade)

- Cross-venue rewards (e.g., food + merch loyalty campaign)

VII. 🧪 Security & Compliance

- OAuth2 merchant login

- Wallet signature validation for token claims

- GDPR/CCPA compliant (no PII stored locally)

- Token and badge logs hashed for audit via Solana

VIII. 📊 Analytics & Reporting

- Track token redemptions and NFT scans

- View reward campaign conversion and drop-off rates

- Exportable campaign logs per venue or wrapper

- Analytics displayed in dashboard (token stats, scan volume)

IX. 🗓️ Implementation Roadmap (Overview)

Phase Milestone

0	Discovery – Rule schema, POS signal mapping, NFT/Token logic
1	MVP – Trigger engine, manual rewards, basic campaign builder
2	NFT Minting – QR generator, PoX contract deployment
3	Token Drop Engine – Reward logic and wallet triggers
4	POS Wrapper Sync – Event listener SDK, partner pilot integrations

Phase Milestone

5   Analytics Dashboard – Drop conversion, redemption reporting

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X. 🎁 Deliverables

- Rewards & Campaign module for Per Diem dashboard

- NFT PoX generator with customizable visual templates

- Solana smart contract suite for PoX and token rewards

- Public API/Webhooks for POS integration

- QR scan handler for signage and receipt campaigns

- Analytics panel for rewards activity

XI. 🧬 Alignment with Per Diem's Vision

Experience Layer	Solana-Based Benefit
Experiential Loyalty	NFT rewards for visit milestones, tagged by experience
Unified Reward Ecosystem	Merchants leverage $PER and vertical tokens with minimal lift

Experience Layer	Solana-Based Benefit
Wrapper Compatibility	Loyalty logic adapts to any POS partner via SDK
Scalable Token Incentives	Campaigns drive repeat engagement and brand affiliation across verticals

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Would you like a Figma mockup of the updated campaign editor or a technical handoff package for the SDK logic?