

VeriPay Telegram Bot - Product Requirements Document (PRD)

1. Introduction

VeriPay is a Telegram-based payment and reconciliation bot designed for restaurants. It streamlines waiter transactions, automates reconciliation with bank statements, and provides admins with oversight for approvals and system updates.

2. Actors & Roles

- ****Waiters****: Record transactions via Telegram bot.
- ****Restaurant Admins****: Manage their restaurant's data, reconciliation, and reports.
- ****System Super Admin****: Approves restaurant registrations, updates system-wide settings, and manages user access control.

3. Core Functionalities (Milestone 1)

1. ****Waiter Registration/Login****
 - Registration by restaurant admin approval.
 - Login tied to Telegram User ID (no password required).
 - Once registered as a waiter, admin login is disabled.
2. ****Transaction Recording****
 - Waiters submit: amount, reference ID, customer name (optional), timestamp auto-generated.
 - Transactions stored in database per restaurant.
3. ****Admin Functions (Restaurant Admin)****
 - View waiter transactions in dashboard view (within bot).
 - Export transactions to CSV.
 - Flag suspicious or duplicate entries.
 - Generate daily/weekly summary.
4. ****System Super Admin Functions****
 - Approve/Reject new restaurant registration.
 - Manage restaurant-level admins.
 - Deploy updates and maintain global system health.

4. Core Functionalities (Milestone 2)

1. ****Bank Statement Reconciliation****
 - Restaurant admins upload PDF bank statements.
 - Bot extracts all transactions from the statement.
 - Matches waiter transactions with bank transactions using reference ID and amount.
 - Flags mismatches (missing, duplicate, or unmatched records).
 - Generates reconciliation report.
2. ****Security & Access Control****
 - Role-based access: waiter ≠ admin privileges.
 - Super admin only for system-level approvals.

- Telegram ID used for authentication.

3. ****Notifications****

- Waiters: Confirmation of recorded transaction.
- Restaurant Admin: Daily transaction summary, reconciliation reports.
- Super Admin: Restaurant registration requests.

4. ****Audit Logs****

- Every action stored with timestamp and user ID.
- Exportable logs for compliance.

5. Future Enhancements (Milestone 3+)

- ****Analytics & Insights****
- Trend analysis (sales per waiter, busiest hours).
- Graphical reports.
- ****Multi-language Support****
- English + Amharic UI.
- ****Integration with Payment Providers****
- Direct linking to local banks/mobile money APIs.
- ****Offline Mode****
- Queue transactions if user is offline, auto-sync later.

6. Technical Notes

- Platform: Telegram Bot (Python + aiogram/pyTelegramBotAPI).
- Database: PostgreSQL (per-restaurant partitioning).
- PDF Processing: pdfplumber or PyPDF2 for bank statements.
- Hosting: Cloud-based (AWS/DigitalOcean).