

Product Requirements Document (PRD): Personal P2P Payment Service (PPPS)

1. Introduction and Goals

Project Name: Personal P2P Payment Service (PPPS)
Target Audience: Registered internal users (individuals)
Version: 1.0

1.1 Project Objective

To create a secure, instant, and auditable platform for users to transfer funds directly to one another. The service must prioritize **transactional integrity** above all else.

1.2 Core Goal: Financial Atomicity

The primary goal is to ensure that a debit to the sender's account and a credit to the receiver's account happen simultaneously and successfully. If one fails, the entire operation must be rolled back (ACID property).

1.3 Key Functional Requirements (What it Does)

ID	Feature	Description	Priority
FR1.1	User Registration	Allows a user to register with a phone number and create a secure PIN.	P1
FR1.2	Wallet Creation	Automatically provisions a single Wallet (NGN balance) upon successful user registration.	P1
FR1.3	P2P Transfer	Allows a user to transfer funds to another user based on their phone number, requiring PIN verification.	P1
FR1.4	Transaction History	Allows users to view their transaction history, including status and party details.	P1

FR1.5	Balance Inquiry	Exposes a secure endpoint for users to check their current wallet balance.	P1
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1.4 Non-Functional Requirements (How Well it Works)

Category	Requirement	Target
Integrity	ACID Compliance	Transactions must be Atomic, Consistent, Isolated, and Durable, primarily enforced using database transactions.
Auditability	Double-Entry	All transfers must generate two balancing ledger entries (Debit and Credit) for every transaction.
Security	PIN Verification	The user's secure PIN must be verified <i>before</i> executing any transfer. PINs must be hashed (e.g., bcrypt) in the database.
Performance	Transfer Latency	End-to-end transfer time must be under 200 milliseconds.
Concurrency	Wallet Locking	Mechanisms (like database row locking) must be implemented to prevent two simultaneous transfers from the same wallet causing an overdraft.