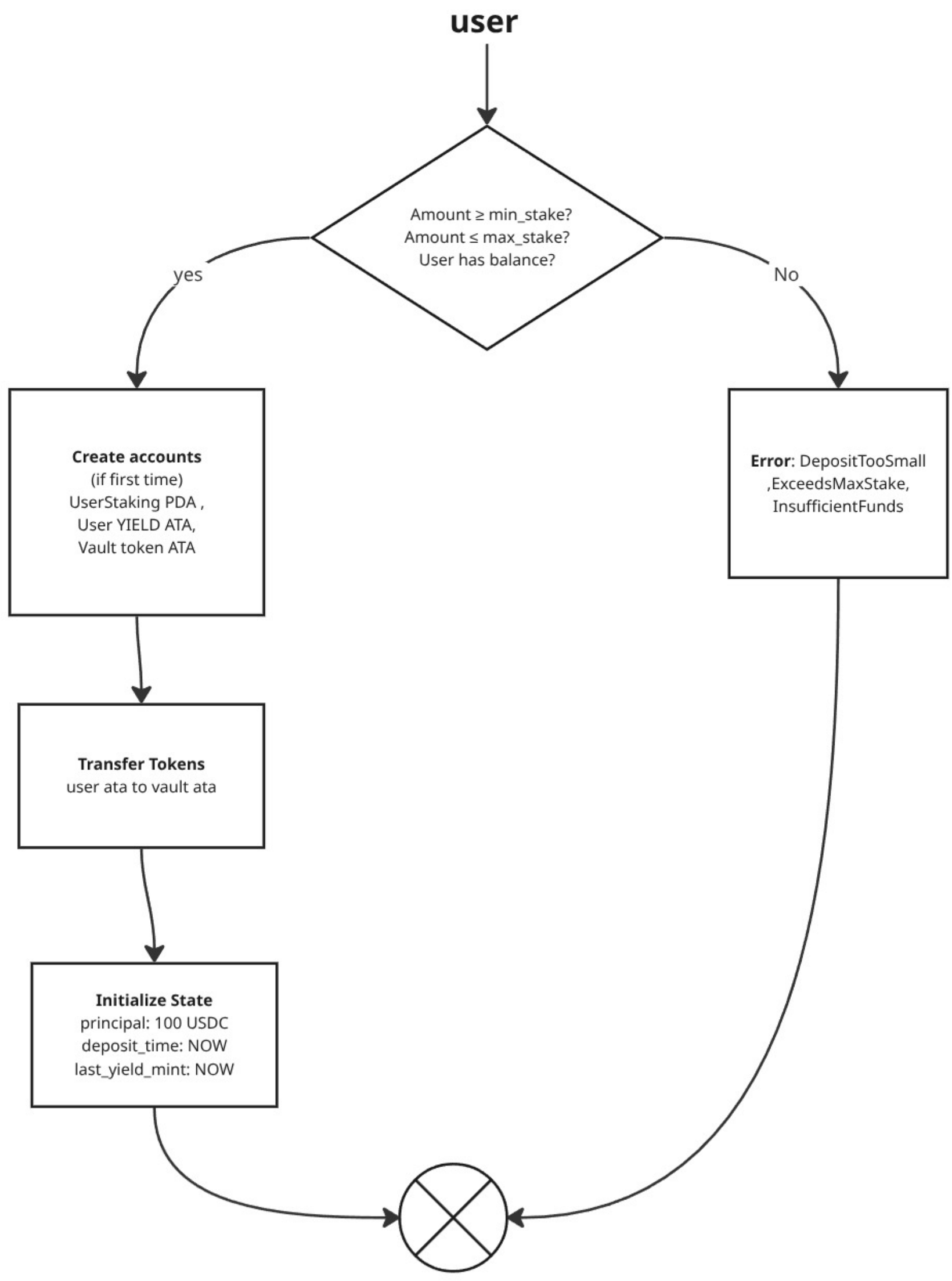
YieldPay
Protocol POC Requirements

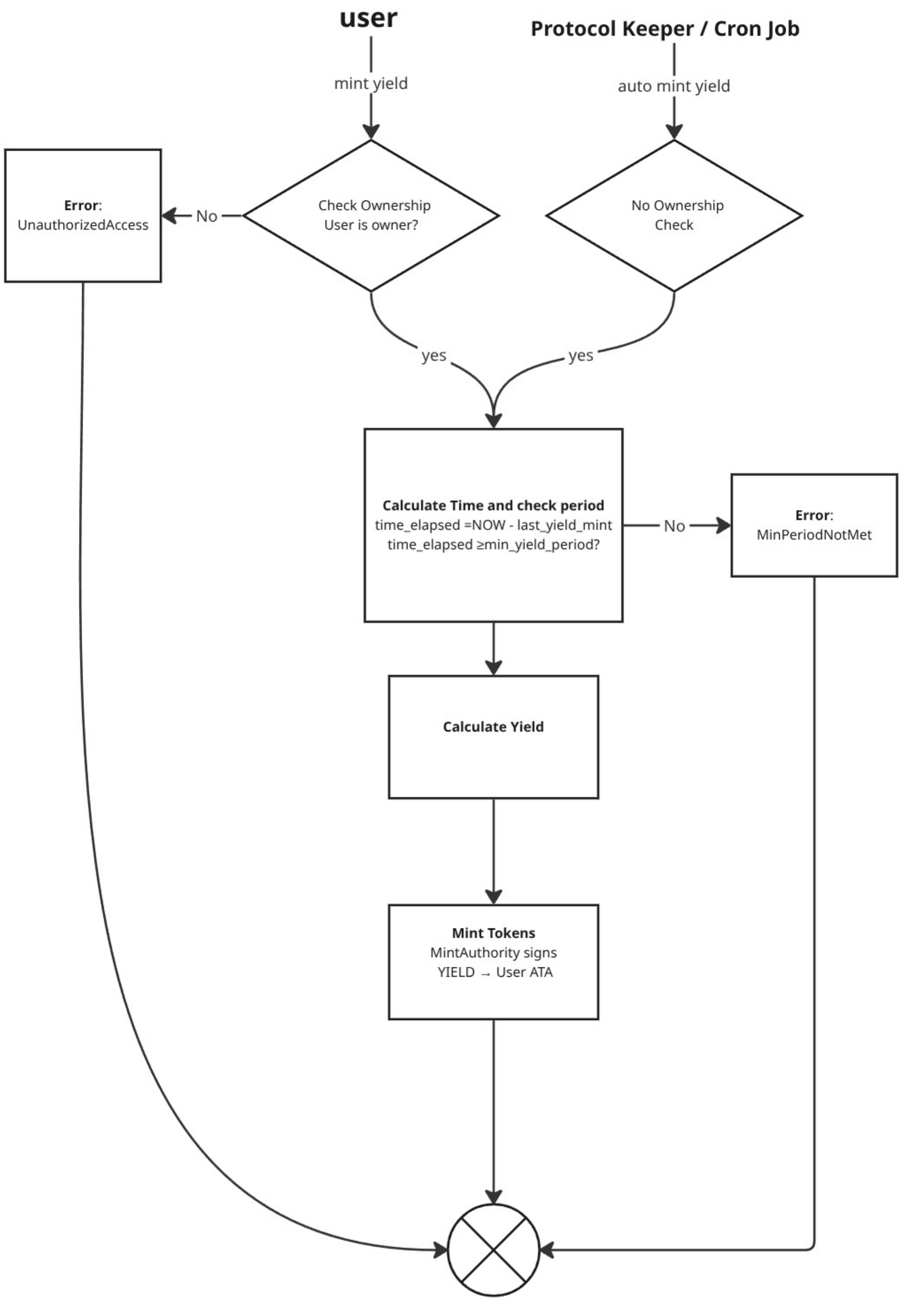
- The protocol allows users to **deposit and stake** USDC/USDT tokens from a whitelisted token list.
- Upon staking, a **UserStakingAccount** and **UserYieldAccount** are created to track deposits and yield.
- The protocol enforces **minimum deposit** and **maximum stake limits** per user.
- All deposited tokens are securely transferred to a **vault account** controlled by a PDA.
- The system calculates **yield based on a configurable APY rate** and allows users to **claim accumulated yield** in YIELD tokens.
- Merchants can **register** with a verified business name to receive payments in YIELD tokens.
- Users can **pay merchants** directly using their earned YIELD tokens, without touching their principal stake.
- The protocol keeps **user principal locked** while allowing spending of yield.
- All payments are validated, ensuring **merchant registration and user balance sufficiency**.
- The protocol **tracks total yield earned** by users and **total yield received** by merchants.
- Users can **withdraw their staked tokens** anytime after claiming pending yield.
- Upon full withdrawal, the system inactivates **the UserStakingAccount.**
- The user can close the **userStakingAccount** after a full unstake.
- Merchants can **deregister** or close their **MerchantAccount** after withdrawing remaining balances.
- All account operations are validated with **ownership checks** and **secure PDA-based signatures**.
- Clear error messages are returned for failed transactions.

DEPOSIT TOKENS FLOW



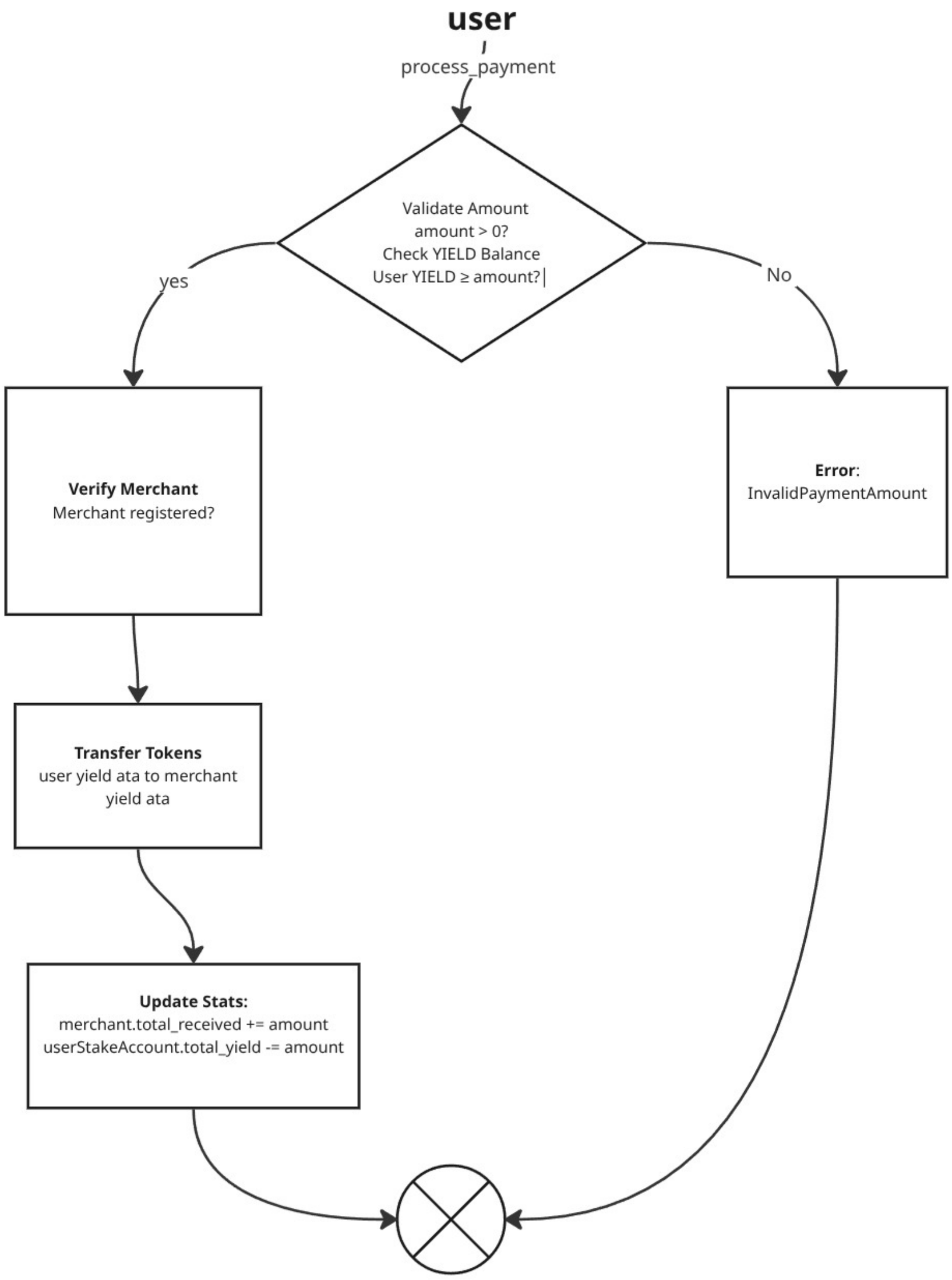
MINT YIELD (CLAIM YIELD)

METHOD 1: User manually claims yield
METHOD 2: Auto-minted by protocol/keeper
Must wait minimum period
YIELD tokens minted to user



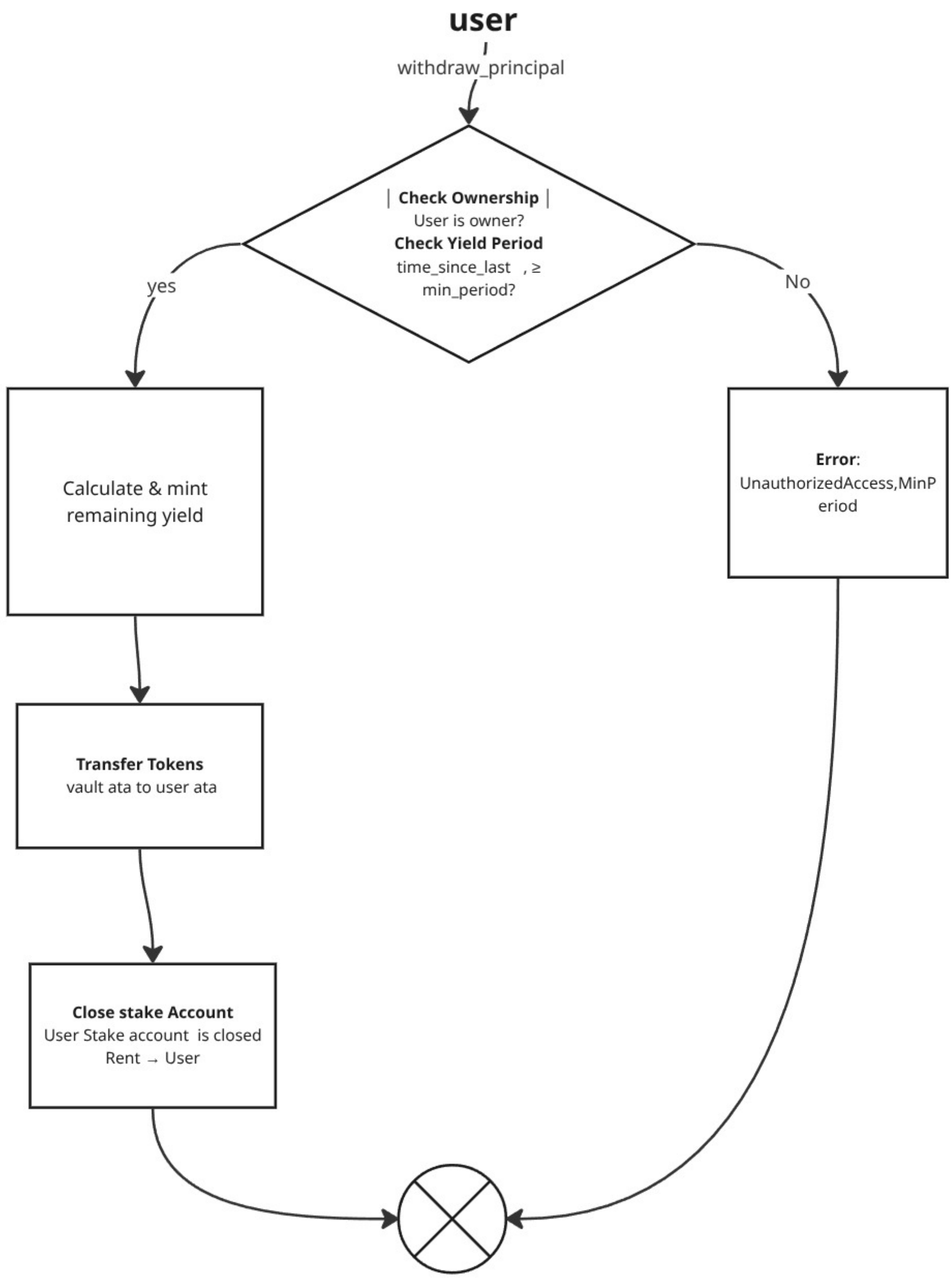
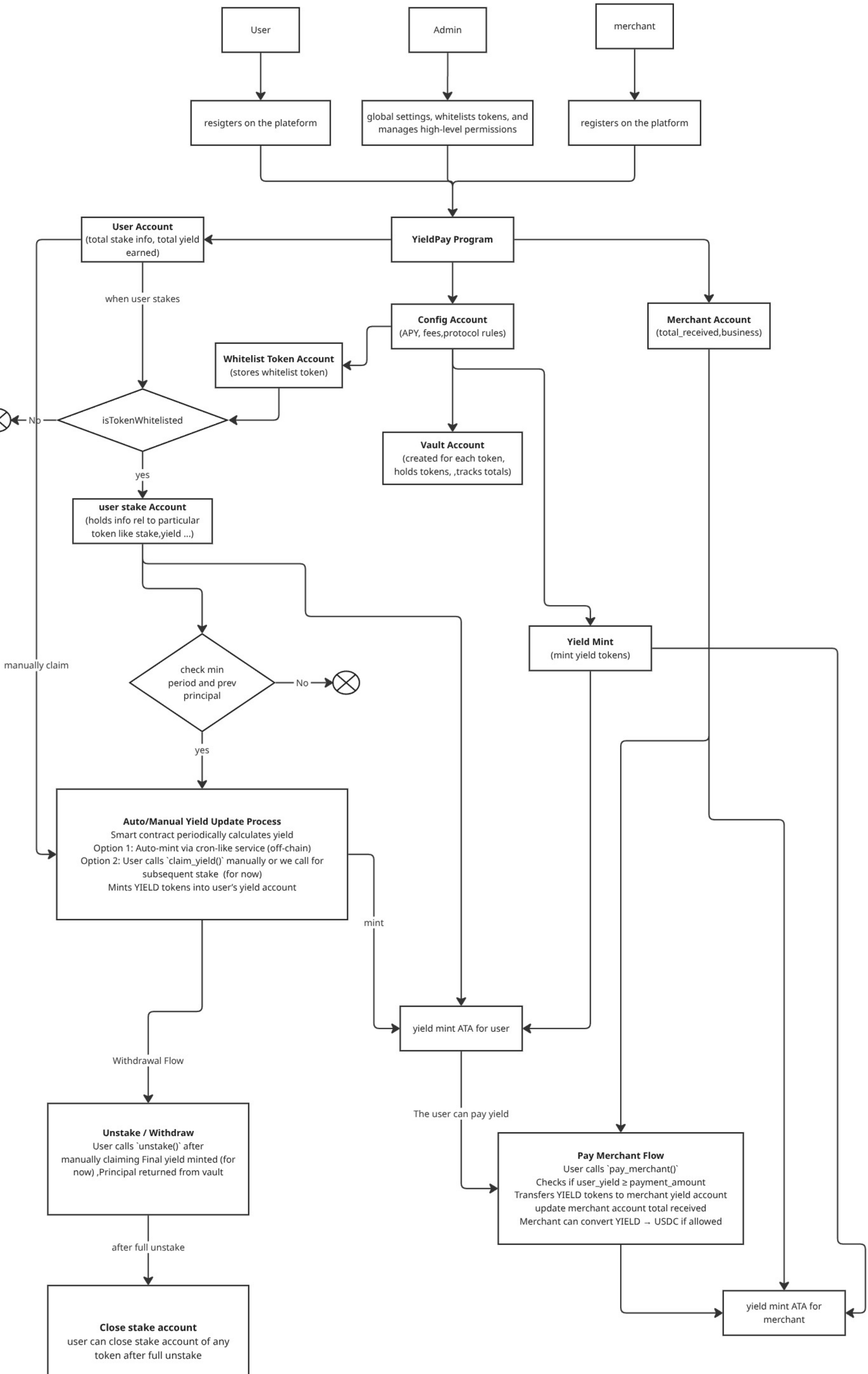
PAY MERCHANT

User transfers YIELD tokens to merchant
Principal remains locked
Merchant receives payment



WITHDRAW PRINCIPAL (UNSTAKE)

User retrieves deposited tokens
Final yield minted if period met
Account closed (not now)



high-level Overview