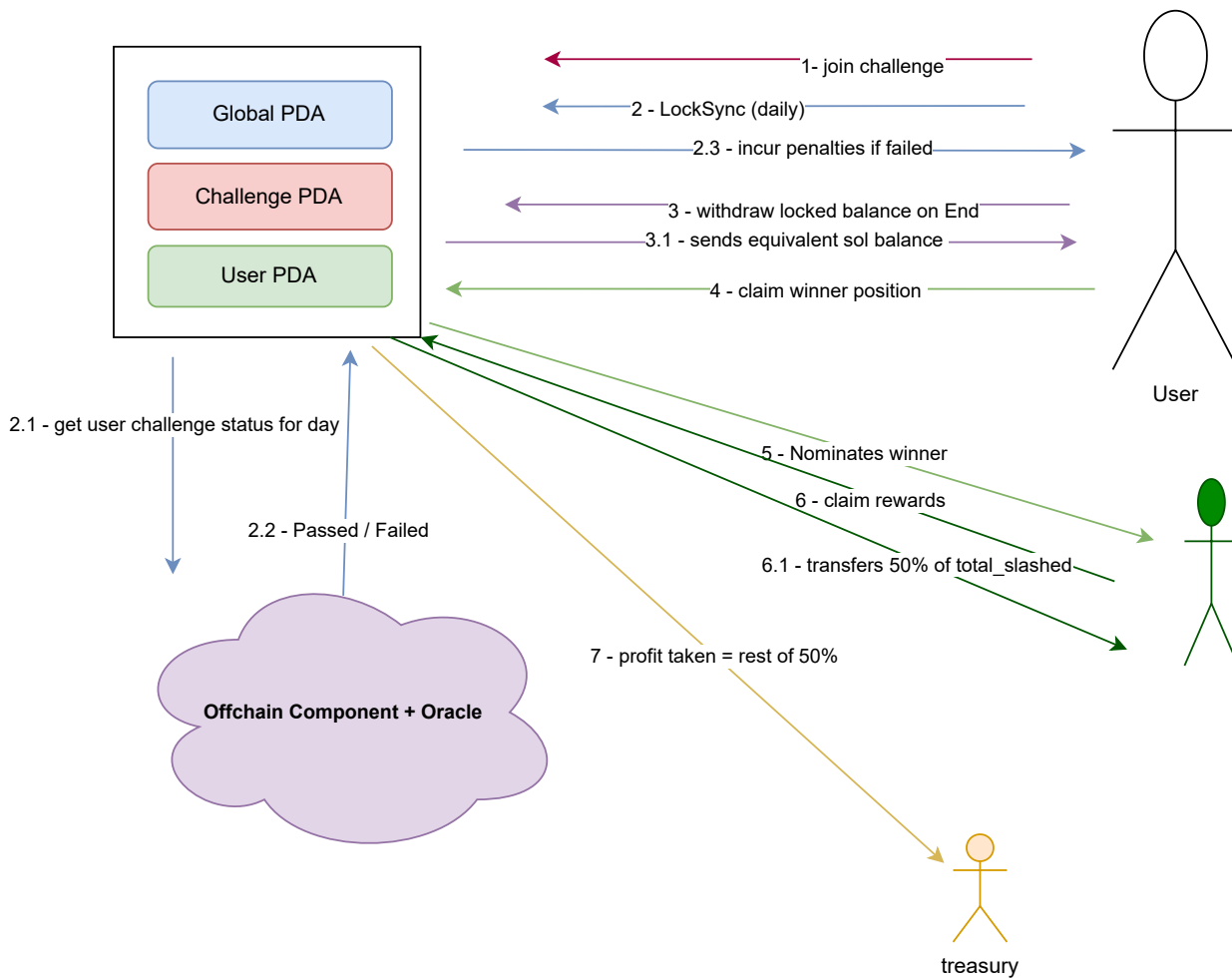


Protocol POC Requirements

- The protocol shall allow anyone to create community challenges
- The protocol shall allow users to join one challenge at a time
- protocol shall take 10 Million lamports from user every single day
- The protocol shall slash users balance by certain amounts if challenge was not completed for the day
- The protocol shall allow users to withdraw their locked balances when challenge ends
- The protocol shall allow users to claim winner positions during 5 day period after the challenge ends
- The protocol shall allow winner to claim 50% of total_slashed amounts from all participants in the challenge
- The protocol shall keep rest 50% as profits

Overview



Onchain State

Global Account

admin : Pubkey
treasury : Pubkey
challenge_ids : u32
bump : u8

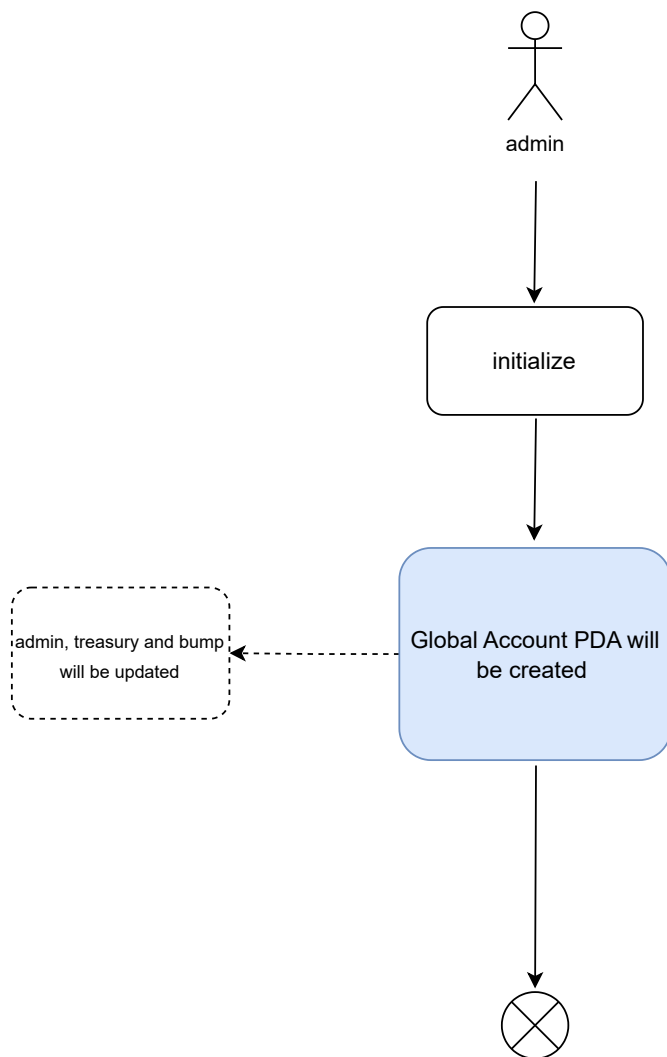
Challenge Account

challenge_id : u32
daily_timer : i64
start : i64
end : i64
total_slashed : u64
winner : Pubkey
winner_streak : u8
total_participants : u32
bump : u8

User Account

user : Pubkey
challenge_id : u32
locked_balance : u64
streak : u8
bump : u8

initialize()

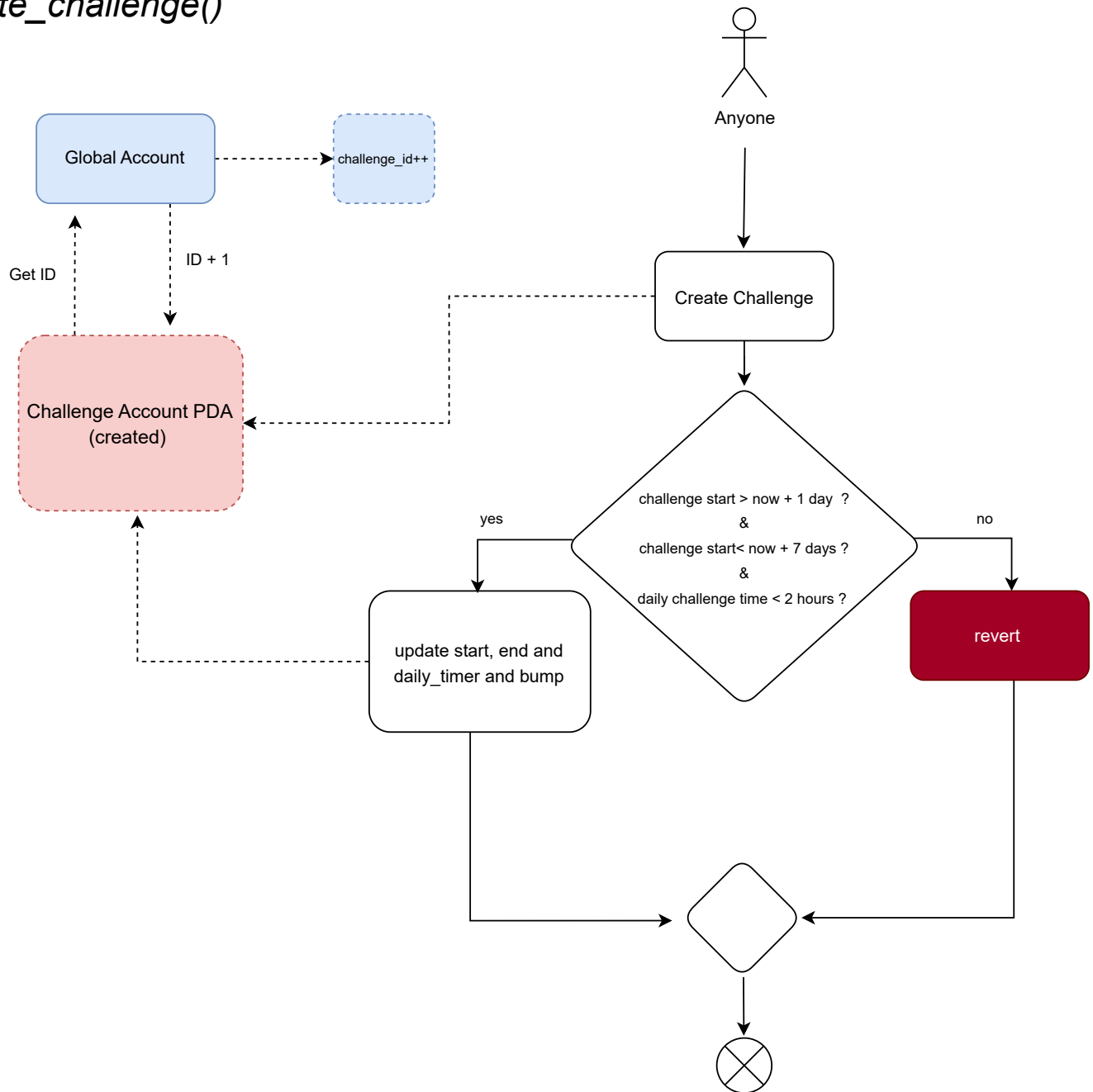


The admin will initialize the contract on deployment

Global Account PDA will be created with high level state like :

1. storing address of an admin for access controls
2. treasury address to store funds
3. challenge_ids to let users determine the currently available id to be used for creation of challenge account
4. And the bump used for creation of Global Account Pda.

create_challenge()



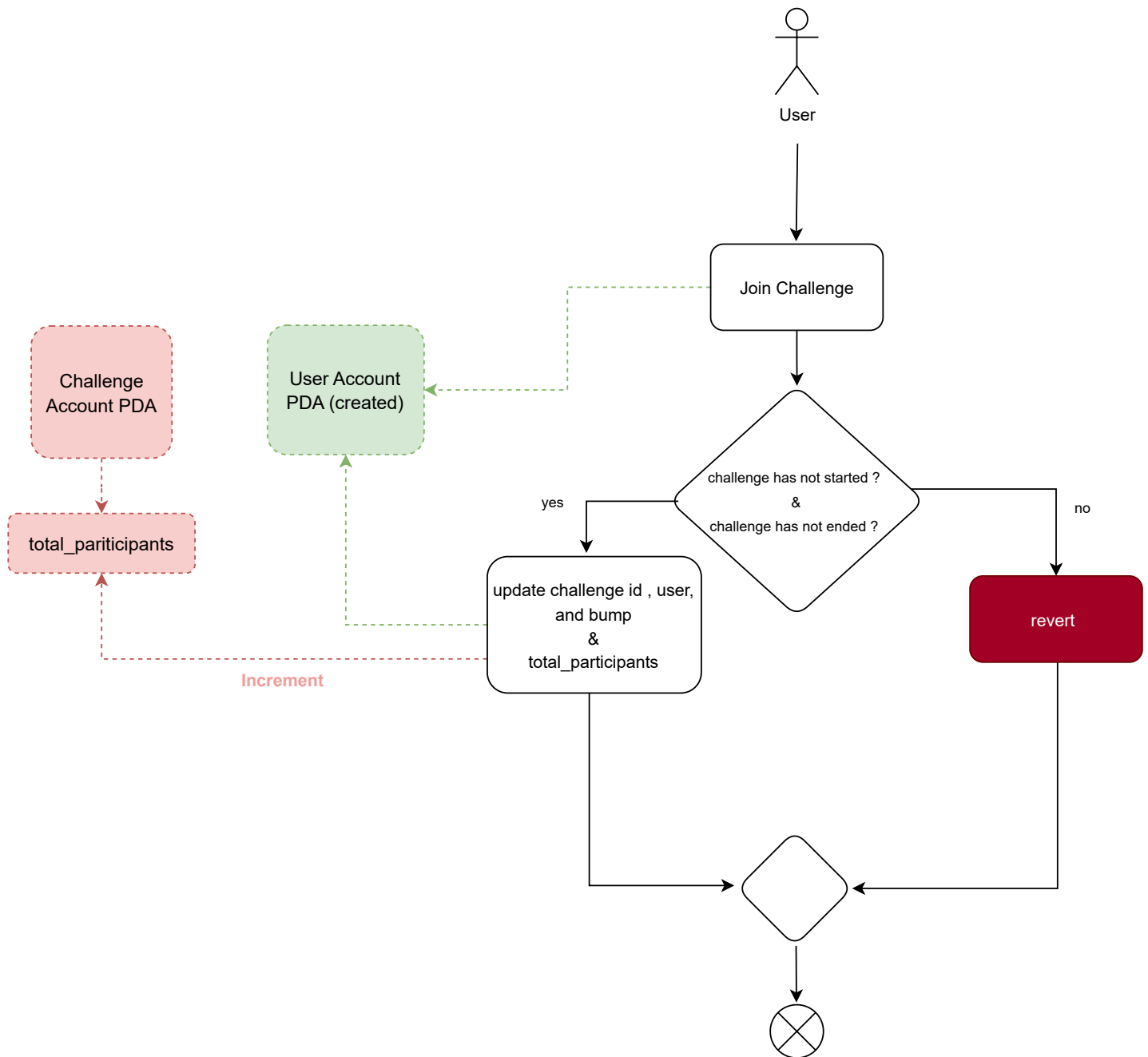
Anyone will be able to create challenges for the community with start time atleast one day from current time but not greater than 7 days from now

By design, all challenges will end after 21 days from the start time

The challenge creator can choose any suitable time as max cap for phone usage challenge as long as it is under 2 hours.

Each challenge will have their own unique id, which will be determined from the global account pda

join_challenge()

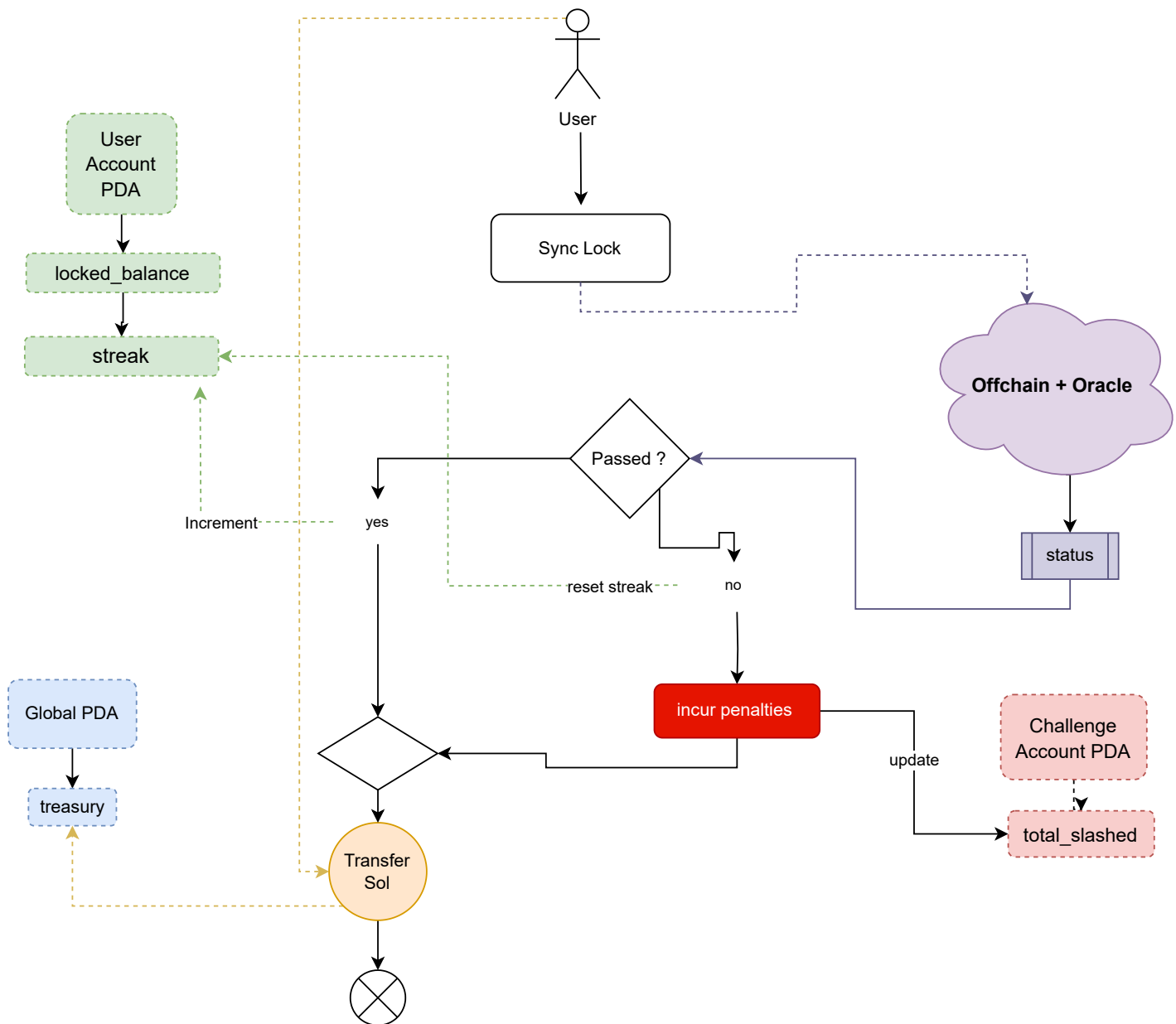


Users will only be able to join one challenge at a time.

Challenges can only be joined if neither the challenge has started nor it has finished

Upon joining, user account pda will be created for user and the id of challenge joined by the user will be stored there

sync_and_lock()



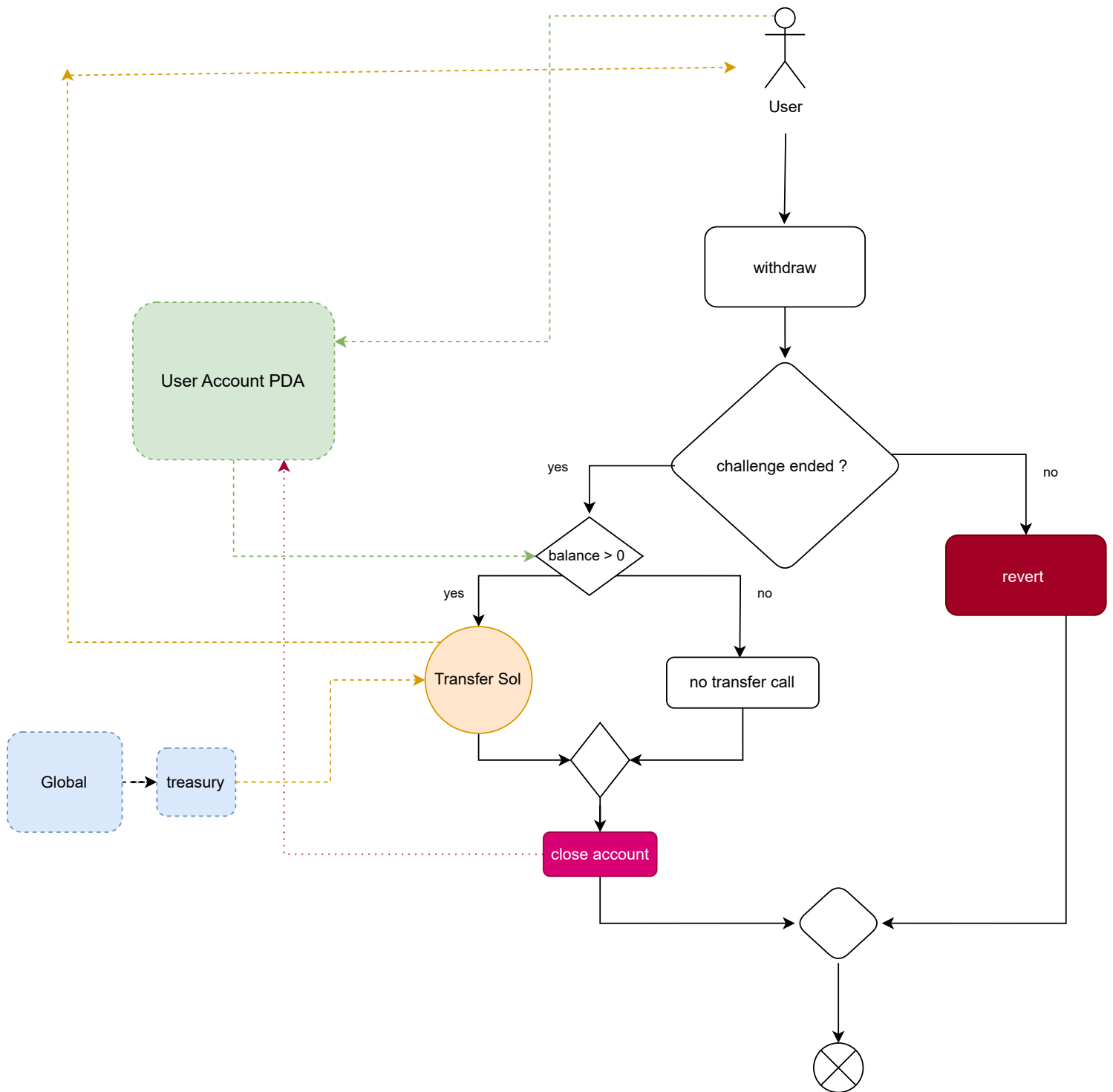
Users will call this function daily to lock 10 million lamports and sync users challenge status data from offchain component

Users will only be able to call this function during specific updation times normally during the end times of the day

If user has failed the challenge for the day, he will get penalized

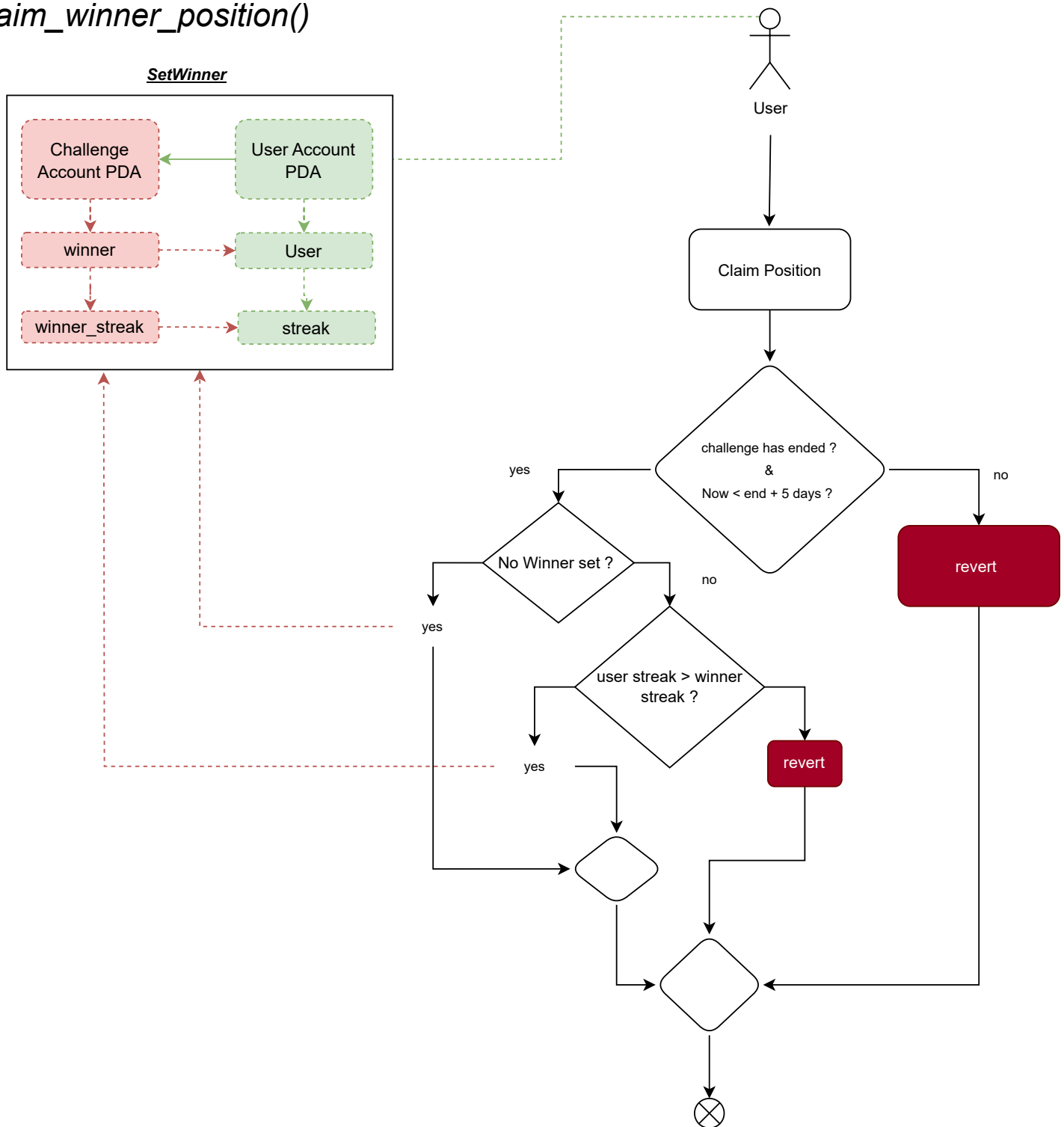
if user forgets to sync_and_lock on any given day, it will be considered as if the challenge was failed even though he might have passed the challenge

withdraw_and_close()



User will only be able to withdraw if the challenge they were enrolled in was ended
if user has positive locked balance left , it will be transferred to him
Finally the challenge account of the user will be closed

claim_winner_position()

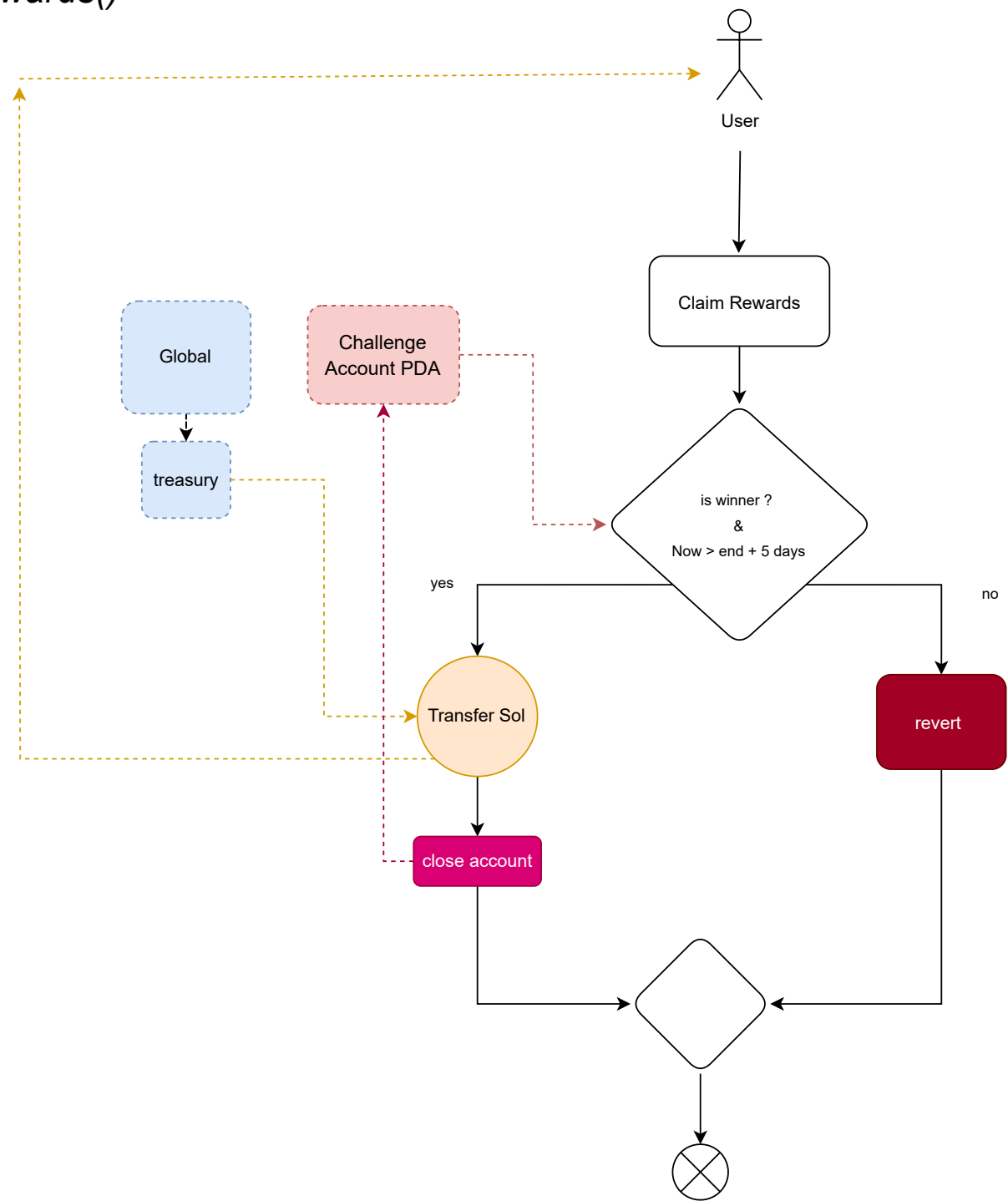


User will only be able to claim winner position if the challenge has ended and the current time is within 5 days after the end time

First user to claim position becomes temporary winner of the challenge and his streak now becomes benchmark for others

All other users will only become winner if their streak exceed first user's streak

claim_rewards()



Winner of the challenge will not be able to claim rewards until 5 days have passed since the challenge has ended

50% of total_slashed amounts from all participants of challenge will be sent to the winner and the rest will be held by protocol as profits

finally, the challenge account will be closed and its rent will be sent to the winner too.