

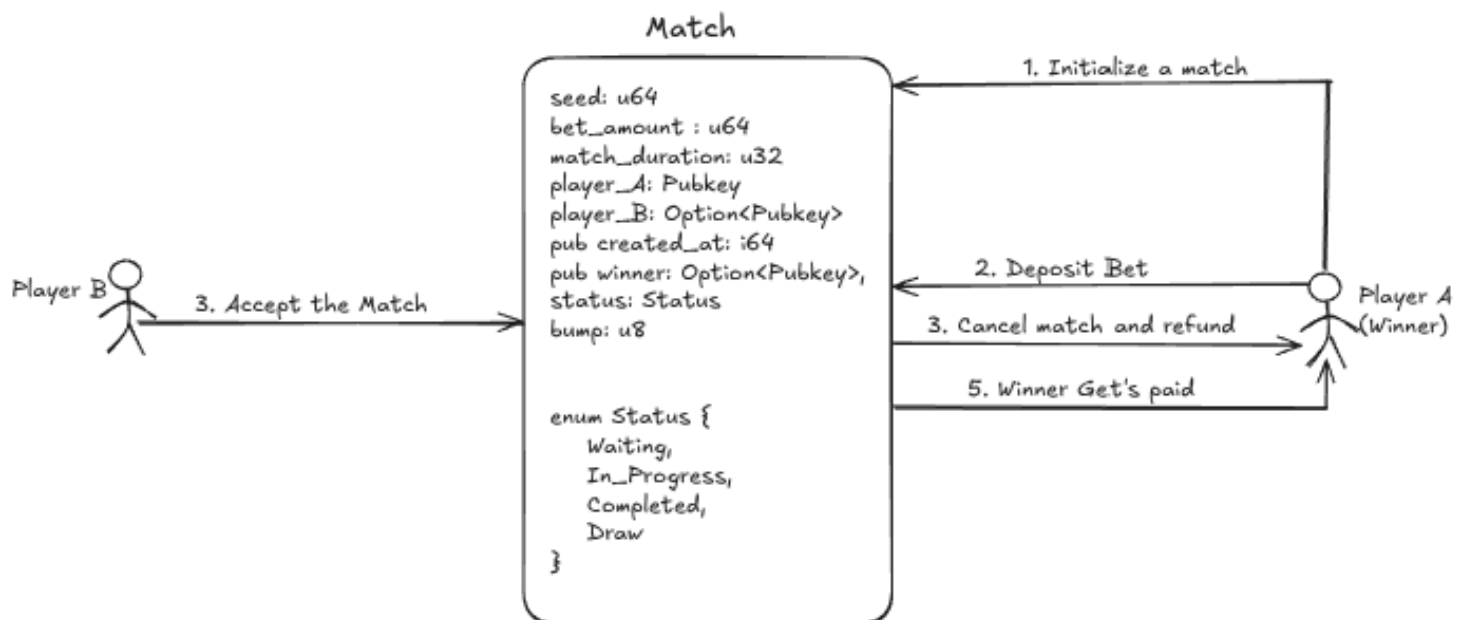
# Assignment: Architecture Diagrams

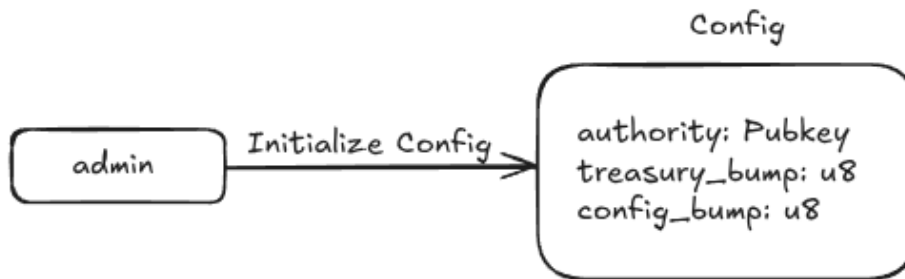
## On-Chain Chess Game with betting

### Protocol POC Requirements

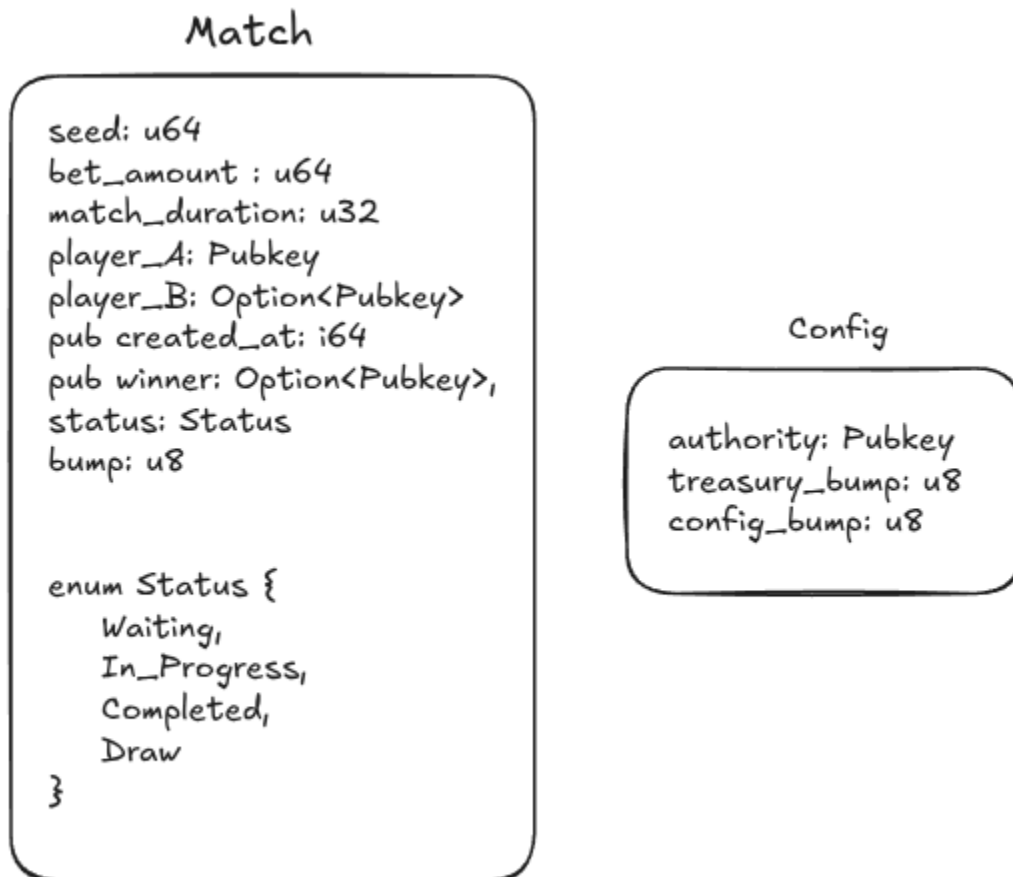
- The protocol should create a match pda to store all match details.
- The protocol should create a vault ATA within the match to store players' bets.
- The protocol should allow a player to deposit a bet in the vault.
- The protocol should cancel a match when requested.
- The protocol should allow the opponent player to place the bet and join the match.
- The protocol should update the match result after match completion and save the winner.
- The protocol should pay the winner after calculating the winning amount.
- The protocol should resolve payouts if the match is a draw.

### Overview

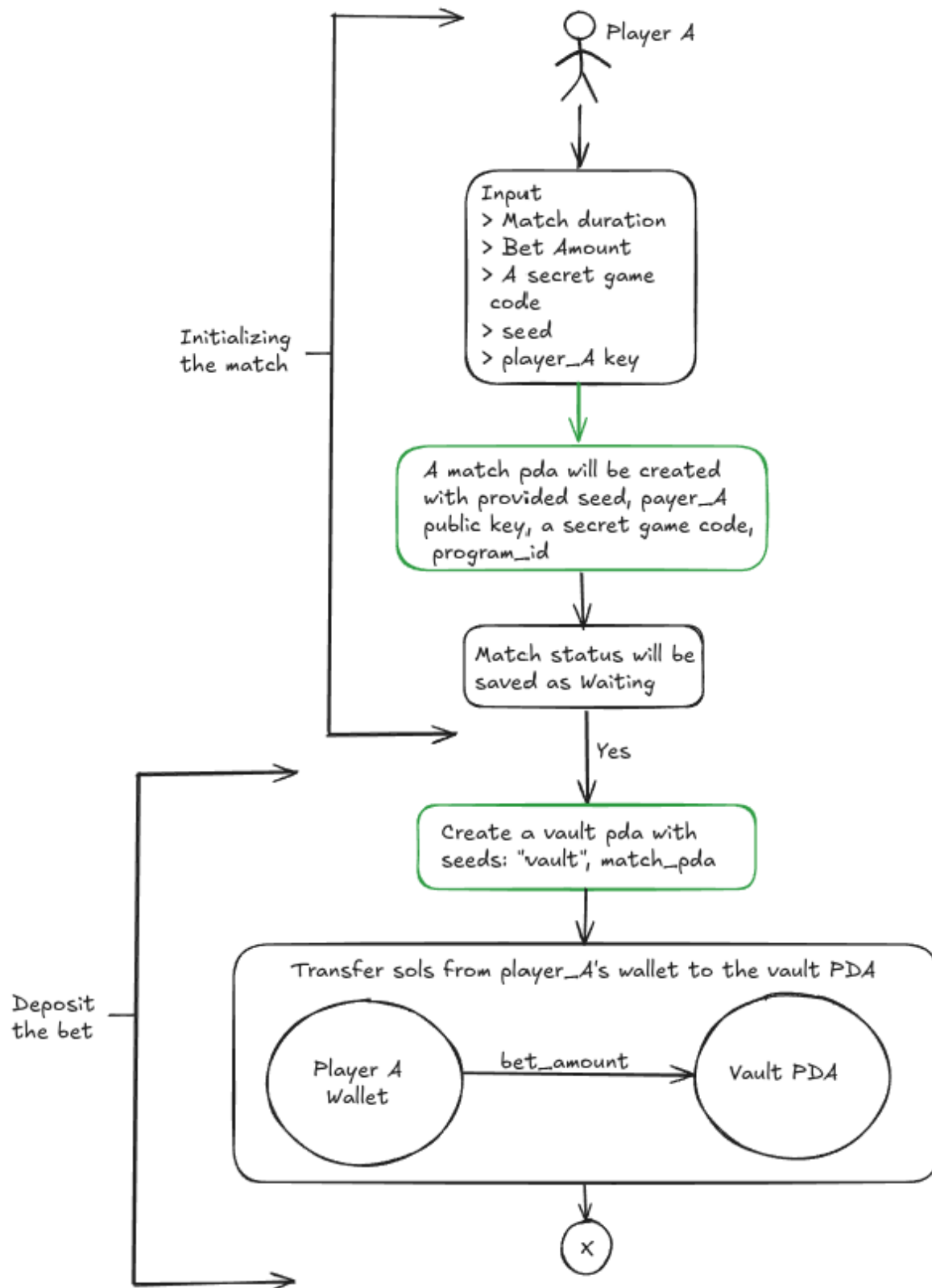




## States



## Initialize a Match & Deposit Bet Amount



## Initializing a Match:

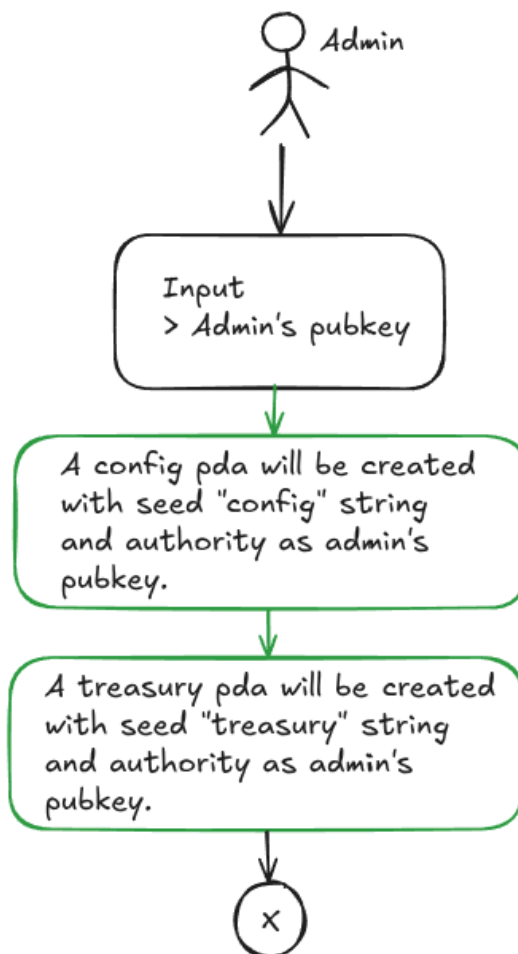
- The player will select the match duration and bet amount, and will also enter a secret game code.
- A match PDA will be created with seeds: "match", a seed, the user's public key, a secret code entered by the user, and program\_id
- A match will be initiated with the state waiting.

## Deposit a Bet

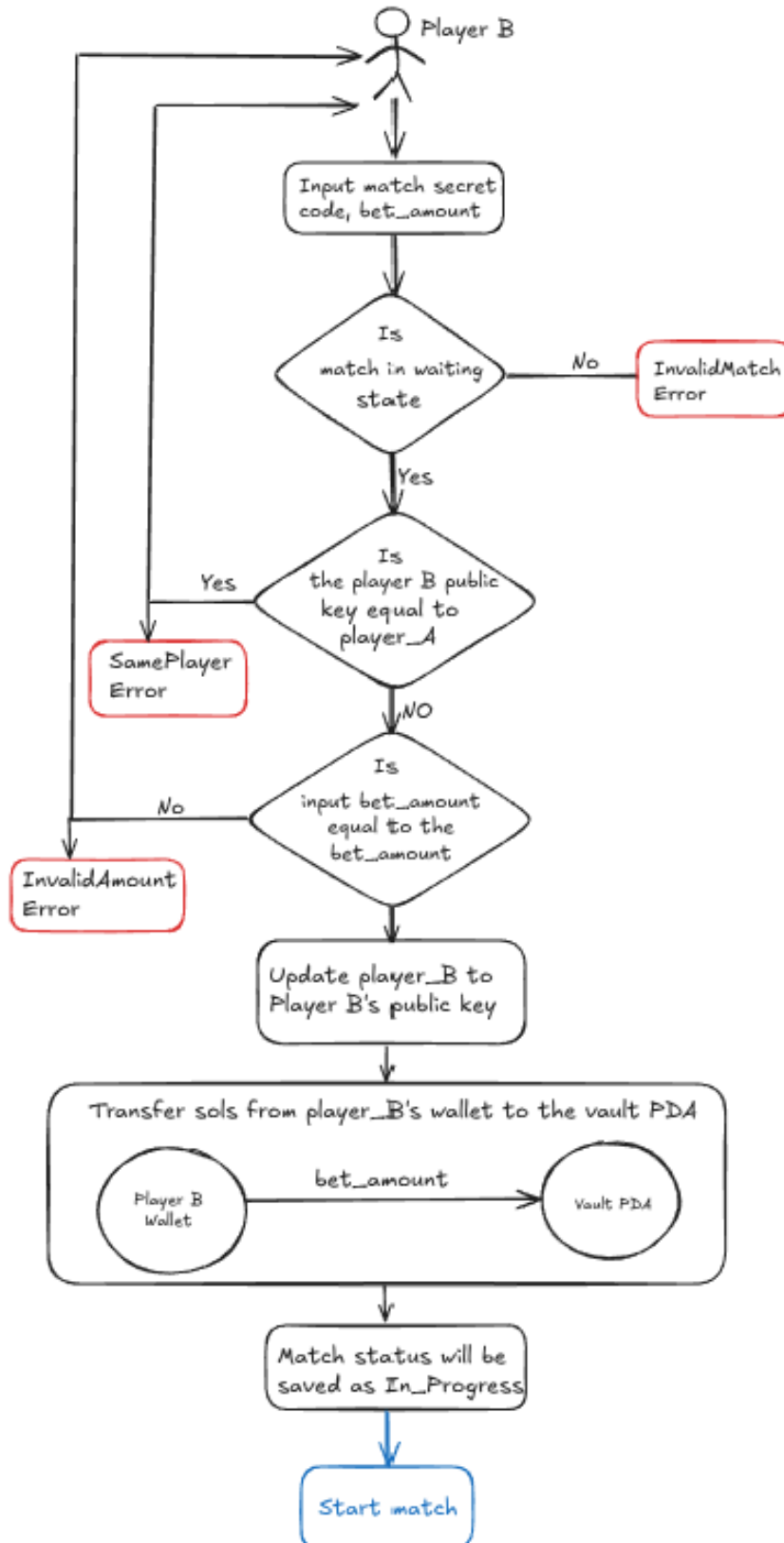
A vault PDA is created with seeds: "vault" and match\_pda.

**Transfer:** From player\_A's public key to vault PDA

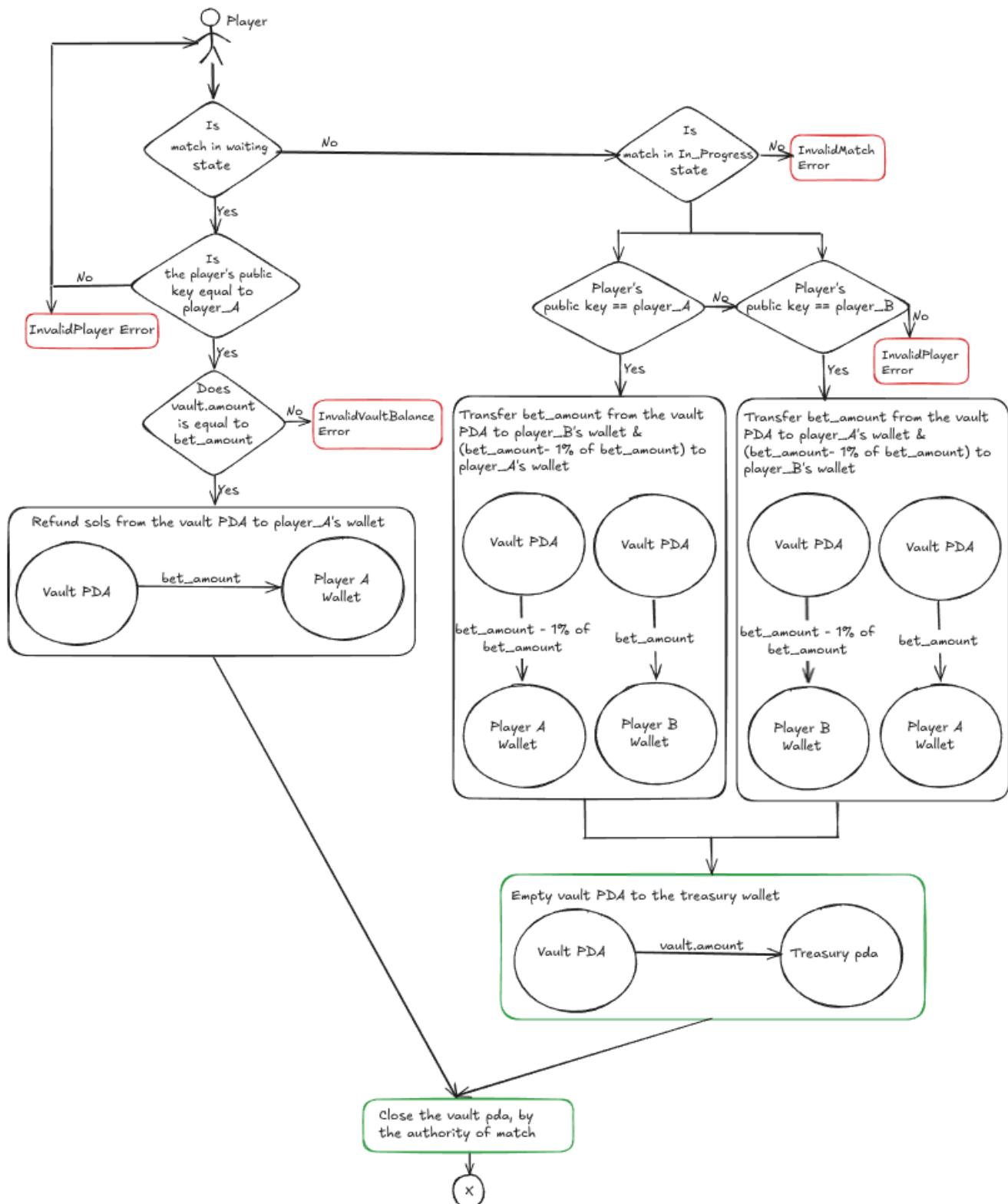
## Initialize Config (By Admin)



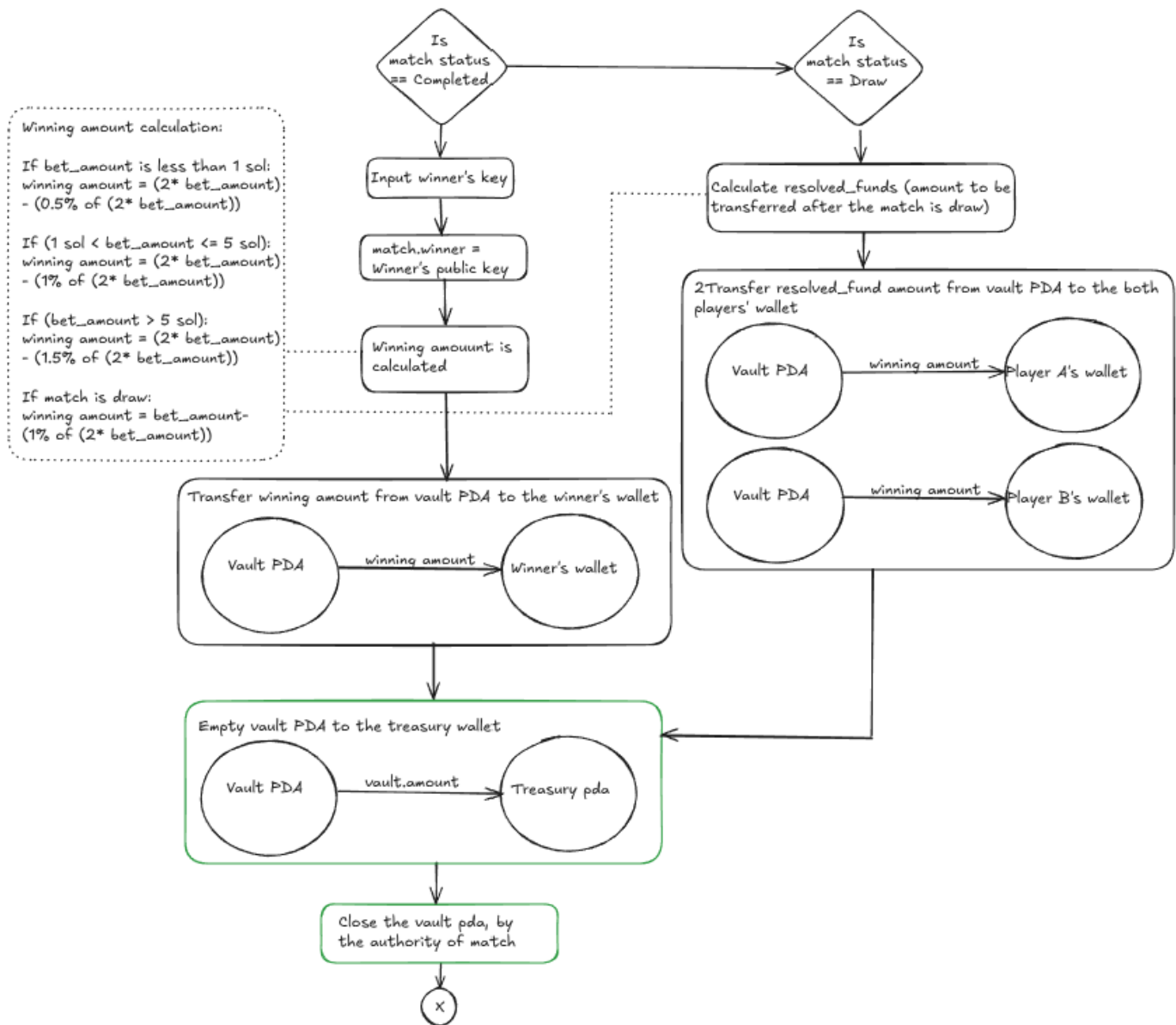
## Accept a match



# Cancel Match and Refund



# Final Payouts



## Withdraw from Treasury(by Admin)

