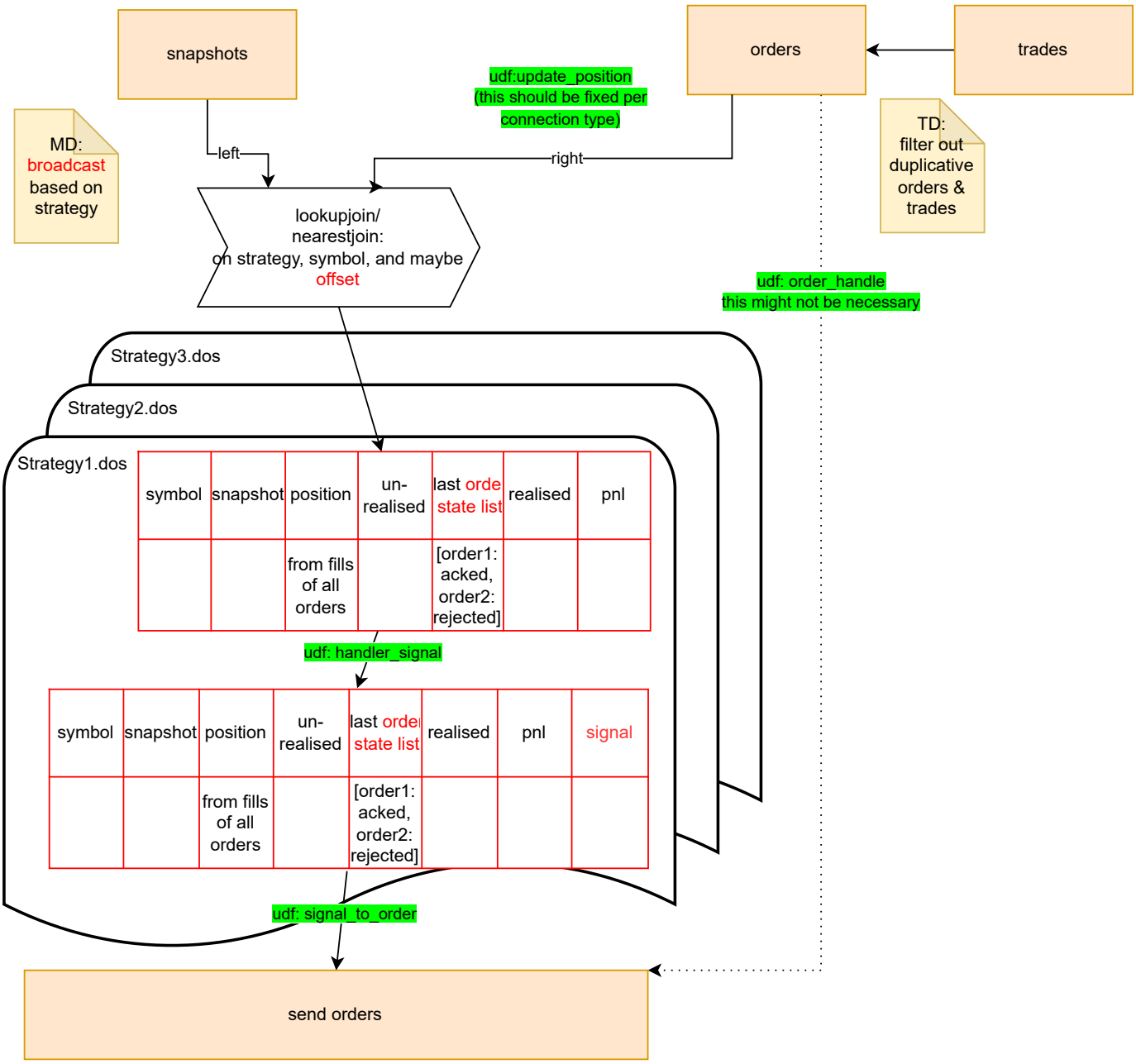
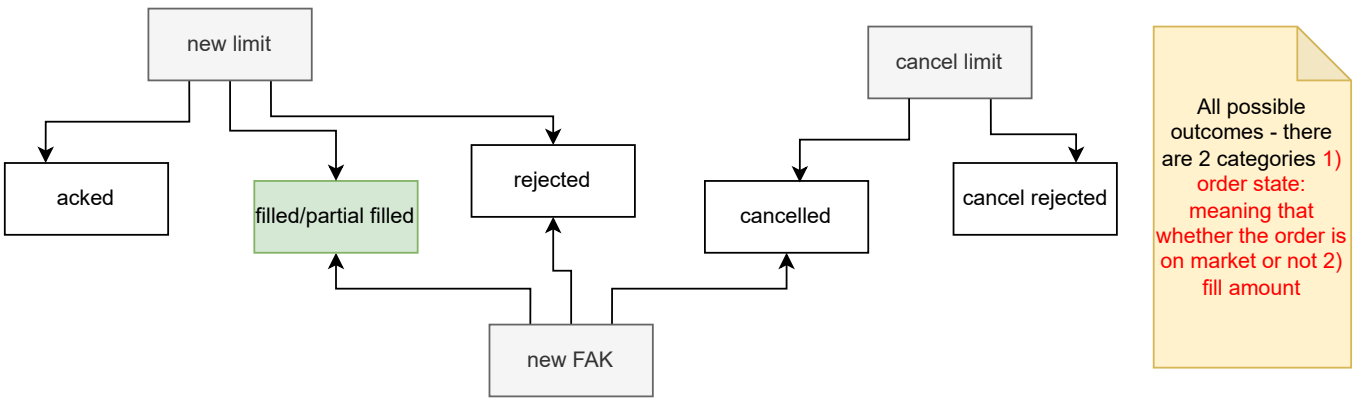
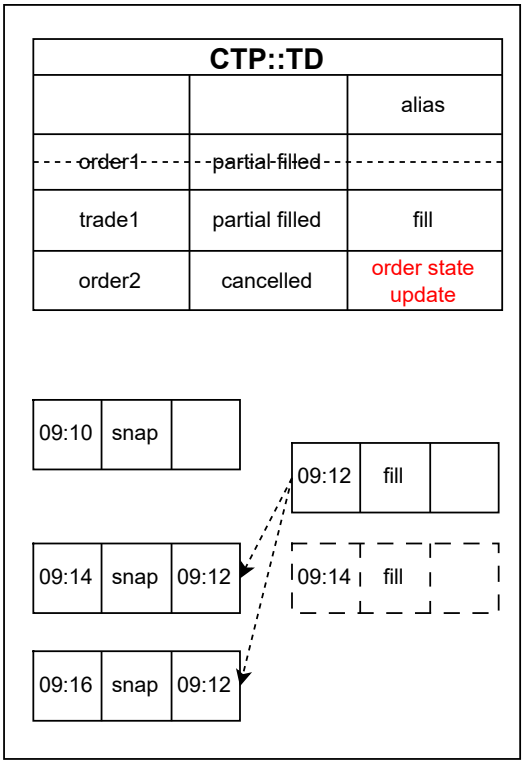
Guidelines:

1. trades and orders should be using same line, then separate for different calculations; or consider filtering out orders that would be covered by trades
2. pnl logic should happen before signal logic
3. udf should be as few as possible, allow for greater user control
4. signals should be goals, signal_to_order convert this to actions
5. Note that the tables in red should be setting appropriate cache size for retention (no need for a big one), rest of the tables should have lines more than 1 day





signal generation examples: **Assumption: each strategy, each symbol only at most one order on market, if there have to be multiple orders, the logic of the multiple orders should be independent**
1. normal bar generation and use OHLCV to generate signals 2. FAK re-submitting: when signal see cancelled resend based on snapshot 3. stop loss: check pnl change 4. order place is wrong: directly resend orders 5. single leg filled: can cross sectional engine check the filled status, then send orders 6. limit order pegging: check difference between placed limit price and current price. Need to send cancel first, and when cancelled is successful send new order 7. TWAP: if it is time-based can control signal, if it is capped by max limit order size can use signal_to_order function to cater



Race conditions	
snapshots & trades & orders	• no way to deal, have to make sure that these arrive according to system time, monitor latency closely! -> maybe nearest join engine can cater this one
existing limit orders cancellation	• if cancelled/cancel rejected happen after a fill then it is fine, even it is not just leave it

Drawback of the system
1. some race conditions remain 2. cannot enable multiple limit order on market based on sequential events - might only be losing queue priority 3. cancel & new, orders reaction might heavily depend on ticks, which is not quite suitable for illiquid products 4. if an order is happening too long ago and the system wasn't restarted, we might missed the order

Live trading situations considerations	
no data	• MD: white box alert & black box alert • TD: black box alert from the big table
disconnect and reconnection	• MD: connect again, ideally should be forming empty bars within the gap • TD: need to restart from start. Confirmed with positions & orders at restart. Make sure the 2 match
latency	• MD: add system time, black box alert, useSystemTime=False • TD: add system time, black box alert, useSystemTime=False
overnight	• TD: need to check positions approaching session end time. Clear up all positions before session end • Check whether tracking the overnight positions continuously is equal to do a ctp reconnect?
strategy start & stop	• Only need to stop subscription for the strategy