Clos3 Protocol v1: Decentralized, leveraged NEAR options

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Clos3 is a decentralized options protocol that allows users to take bounded leveraged long or short positions on the price of NEAR / USD. It implements an Automated Market Maker (AMM) that mints BULL (long) and BEAR (short) positions as traders transfer in collateral ($NEAR). The leverage is enforced by the token weights the AMM holds.

Clos3 is dependent on an on-chain price oracle that is used to rebalance the token prices and leverage. On Ethereum ChainLink is a popular price feed provider, for Clos3 we would like to propose a new NEP (TBD) which requests validators to provide the current NEAR price when proposing blocks. These proposed prices can be aggregated and used as a price feed giving Clos3 the ability to quickly update positions and balances, making frontrunning less likely due to frequent price updates. Clos3 also delays the profitable price feed entries by one block in order to counter any frontrunning ability that would be left in between blocks. Everytime the price updates on the clos3 smart contract - a user's balances leverages are recalculated in the form of a "rebase".

Balance rebase at 10x example:

- NEAR/USD = $1
- Alice buys 10 10XBULL for 10 NEAR
- Bob buys 10 10XBEAR for 10 NEAR
- NEAR/USD = $1.01
- Alice would still have 10 10XBULL shares because of the positive price rebase delay of 1 epoch
- Bob would have 9 10XBEAR shares left
- NEAR/USD = $1.02
- ALICE would have 11 10XBULL shares (because of price debase delay)
- BOB would have 8 10XBULL shares

Each BULL / BEAR share is redeemable for 1 NEAR meaning that Alice has a potential PNL of 10% or 20% if on the next price update the price of ETH/USD is still $1.02

Leverage calculations:
The leverage for the BULL and BEAR tokens is targeted to always be 10x, but the actual leverage is dictated by the relative difference between the active liquidity in BULL and BEAR.

$$bull\ leverage\ =\ min\ \left\{\ \frac{bear\ liquidity}{bull\ liquidity} * 10,\ 10\ \right\}$$

$$bear\ leverage\ =\ min\ \left\{\ \frac{bull\ liquidity}{bear\ liquidity} * 10,\ 10\ \right\}$$

E.g. in a case where bull liquidity = 20 and bear liquidity = 16. Bull leverage = 16 / 20 * 10 = **8x** and bear leverage = 20 / 16 * 10 >= 10 = **10x**

Liquidity Provision
Liquidity providers on the Clos3 protocol provide initial liquidity by transferring the Pool's collateral token in. In exchange for providing liquidity the LPs receive a percentage of the trading fee, currently set at 0.03%.

Let's create another example:

- Alice creates the Clos3 pool and market makes it, providing 1000 NEAR
- The pool mints 1000 LP shares for Alice since she is the first LP
- The pool mints 500 BULL and 500 BEAR tokens
- Bob buys 10 NEAR worth of bull shares
- 0.3 NEAR get's sent to Fee pool - of which Alice as 100% ownership
- Pool mints 10 BULL shares
- BULL leverage decreases, BEAR leverage remains 10x making it increasingly attractive to take a short possition
- Alice can claim the 0.3 NEAR in the fee pool