

YOLOrekt Litepaper (v.1.1)

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Abstract

YOLOrekt is a decentralized short-term prediction exchange. In its first iteration, users will be able to predict whether the final price will end up above or below a strike price and place bids on the outcome. Liquidity on YOLOrekt is provided by decentralized liquidity pools that are backed by liquidity providers. In order to enable decentralized liquidity provider (LP) pools, YOLOrekt uses a utility token called YOLO. This allows YOLOrekt to solve a number of issues concerning in-game liquidity and incentivizes liquidity providers by allowing LPs to stake YOLO tokens directly into the game liquidity pool and lock in tokens for additional rewards and privileges.



Introduction

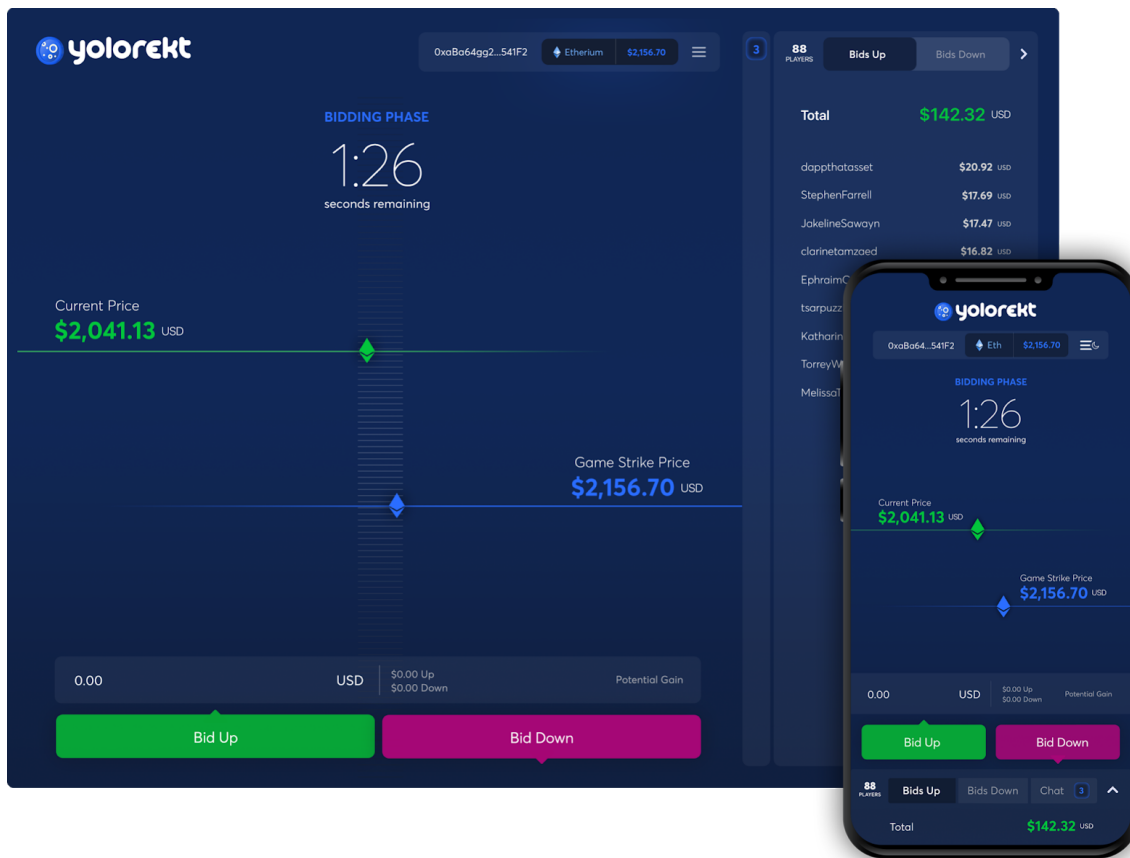
For Degens familiar with the stock market and sports betting, the words “Yolo” and “Rekt” may sound familiar; they refer to asymmetrical profits and demoralizing losses, respectively. In fact, the entire Wall Street philosophy is based on risking long positions early to capture asymmetric returns and taking short positions to hedge against inevitable downturns.

YOLOrekt is designed to mirror these behaviors in short, 3-10 minute settings. Bidding on the price going above a strike price mirrors the long position; conversely bidding on the price going below the strike price mirrors the short position.

What is YOLOrekt?

Launched in early 2019, [YOLOrekt](#) is a trader vs. trader game that allows users to bid on the price of Ethereum in short bursts. Despite being launched in a bear market, the decentralized application (dApp) quickly reached the top of [DappRadar](#) and, at its peak, processed over \$100k in volume per day. What makes YOLOrekt is how it capitalizes upon multiple major trends, including gamification, decentralization, and prediction.

YOLO Product Intro: Variant #1 Walkthrough



YOLOrekt is a derivatives product reminiscent of binary options. The platform is hyperfocused on a novel design for displaying real-time price feeds and gamifies the experience of predicting where the price might land.

Price prediction (bidding) is broken down into 3-10 minutes games. Variant 1 of the game takes a total of three minutes and has several phases.

Let's imagine we're bidding on Ethereum's price. Here's how Variant 1 would play out:

1. **"Strike Price" discovery** YOLOrekt uses APIs from various exchanges and trusted oracles (e.g., Sushiswap and Chainlink) to deliver a constant price feed of the underlying asset. In our example, the game's "strike price" is calculated by determining Ethereum's average price over a period of 30 seconds
2. **Betting period** Now that we have our "strike price," the betting pool's participants are given 60 seconds to place their bets. They have a simple decision: will Ethereum's price be above or below the "strike price" in 90 seconds? There's an incentive to bet quickly to neutralize the "last mover advantage." The earlier in the betting period that you place your bet, the higher your rewards! Currently, there is a \$5 minimum to manage orders and reduce spamming.
3. **Wait and see** Once the betting period has ended, participants can sit back and watch the price of the asset fluctuate. If at the end of the 90 second period, the user prediction proves to be correct, they split the pool with the other winners in proportion to

how much they put in and when they placed their bid. YOLOrekt liquidity providers take a minimum 3% fee on the winning pool for facilitating these trades.

These games are meant to be low-stakes and fast-paced, allowing users to move seamlessly from one game to the next. The mobile and web applications are also intuitive and frictionless, similar to Robinhood and other gamified, minimalist financial applications.

YOLONomics (Tokenomics)

YOLOrekt brings the power and accessibility of decentralized finance to short-term prediction markets. The system follows the YOLO design philosophy: use community-proven primitives and token mechanics without the notorious complications of some decentralized financial systems in order to provide simple and powerful tools for liquidity provision and future users governance of its platform. This does not prevent individual game modules from using the most sophisticated numerical methods and models deployed on EVM (which will be outlined in the upcoming whitepaper). However, it enables elegant interfaces for end-users and liquidity providers who want to plug and play into the system.

Providing Liquidity

In order to provide liquidity, liquidity providers (LPs) need to stake a certain amount of YOLOrekt's base utility token, **YOLO**. When participants provide liquidity, Yolo LP share tokens (**YLP**) are issued.

YLP holders can withdraw at any time to receive their share of the pool, which includes any gains or losses incurred during round settlement as well as fees earned from the capital deployed by users participating in those rounds. It should be noted that LPs can receive high rewards for providing liquidity (3%+) plus gains from the game round settlement. However, should the price of the assets marked in a pool move suddenly and unexpectedly, a loss could occur. This loss would be analogous to toxic order flow in traditional double auction markets.

Rewards Mechanics: Layering Rewards with LP Locking

Rewards are provided from the YOLO reserves and distributed in the utility token contract. This incentivizes early adopters to participate. The rewards can be applied to both LPs and users, but the majority of rewards is allocated to LPs. Once providers receive LP tokens, they are incentivized to lock in their LP tokens to receive more rewards, as compared to providers who don't lock their LP shares:

- Locking emits a **LYLP** token (which will provide DAO functionality in the future)
- The reward has an emission profile in time and expires in about 3 years
- In the future, the reward curve can be adjusted by DAO participants
- Tokens will be allocated to participant accounts, which can be withdrawn or collected by users/LPs who call on the contract periodically
- Withdrawing before lock time is permitted; however, such withdrawals will result in 4% of LP stake being placed into the treasury and redistributed to other LYLP holders

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YOLOrekt believes in environmentally sustainable farming and will never provide 1000% APYs with aggressive rate decays. “Tragedy of the commons” is a dominant strategy that leads to unsustainable ecosystems and rugged users. A sustainable product and a happy community are one of the core missions of YOLOrekt. We will orchestrate the initial reward schedule to provide rewards emissions at a reasonable rate over the course of approximately three years.

Though the YOLOrekt market-making algorithms and farming scheme are markedly different with respect to the majority of Defi applications, interoperability with other platforms is guaranteed, as all tokens issued by YOLOrekt are either ERC20, ERC721, or ERC1155 compliant.

Governance

Open governance is a key component of a healthy dApp community, and YOLOrekt intends to push aggressively towards a decentralized governance mechanism. This approach relies on a combination of social consensus and powerful DAO contracts that are able to execute arbitrary external contract calls to manage the system of YOLO smart contracts. As of now, the governance model is intended to control important game parameters, particularly those which relate to fees and payouts, rewards parameters, oracles, registered core contracts, and the approval of new game proposals as well as treasury and admin token balances.

Automated Market Making

In traditional markets, a market maker’s worst-case loss happens when traders have high outcome certainty. High volatility with negligible trend velocity allows market makers to increase profits with larger spreads, while traders are less certain of the outcome.

In automated market-making (AMM) on a blockchain, traders execute an algorithm-assisted trade on a smart contract against existing deposits made by providers who mine liquidity, as opposed to traditional exchanges, which provide a continuous dual auction and where orders are matched against existing bids and offers. AMMs continuously offer both buy and sell functionality at a price that is determined by a programmed cost function. While it is true that legacy AMMs have been primarily based on market scoring rules (MSRs), adaptations in crypto, such as constant function market makers (CFMM), have become more widely implemented in AMM’s, including Uniswap, SushiSwap, Balancer, and Curve.

In the case of YOLOrekt, automated market making is also tied to an algorithm on a smart contract, even though part of the game logic can also be assigned off-chain. As mentioned, LPs stake their YOLO token on the game liquidity pool contract, while the AMM algorithm subsequently draws in a small portion of the liquidity from the pool, placing it as an in-game bid on either or both sides. Determination of positions are done based on important scoring mechanisms and stochastic considerations, which involve volatility, drift, and event probabilities. (Details on the pricing function will be available in the complete write-up of the whitepaper.)

Liquidity Provider Loss Minimization

In each round, a minimum 3% fee is collected on user bids. During times of low volatility and/or high drift, LPs are exposed to toxic order flow. One of the approaches YOLOrekt takes in order to safeguard LPs is increasing fees off the floor based on early user action and dynamically precomputed probabilities of where the price might land at the expiry time. These are commonly recognized as premiums in options markets that are paid upfront in order to mitigate counterparty risk. Dynamic fees are determined on whether or not the AMM algorithm perceives a significant change in market demand. (Decentralized business logic support with novel numerical approximations tools to enable nonlinear models will be discussed in the full whitepaper.)

Miner Extractable Value (MEV) Loss Mitigation

A major consequence of decreasing miner block rewards coupled with the now large transaction throughput on AMMs has given rise to miner manipulation of transaction requests made on the ethereum network and its sidechains. MEV is generated by removing, reordering, or adding transactions to squeeze more profit by the block miner, at the expense of the users on the network. A common scenario is a “sandwich attack” where trade slippage is suffered by CFMM participants who send trade requests, only to get frontrun by miners.

YOLOrekt’s platform mitigates such attacks, given its novel market design. Imagine a miner who seeks to capitalize on a YOLOrekt market participant. On a CFMM, no transaction is safe as the arbitrage profits are readily apparent. To take advantage of a relatively successful participant, the miner would need to track performance on numerous market participants to filter on experts demonstrating high-return histories. Subsequently, the miner can mimic the player by adding an identical transaction to its block, parasitically diluting payouts to the expert participant. MEV can be mitigated by players if they choose to rotate their addresses, making it difficult for miners to assess performance histories over the course of a participant session, therefore disrupting MEV. Revising chain state with a reorganization attack is prevented by an authorized signature on the final bid amounts designated for a given round.

System Architecture

Network Selection

In 2019, obstacles to the deployment of a fully decentralized short-term prediction application proved to be a difficult reality facing the future of blockchain development. The primary pain point was the “oracle-problem”: the dependence of price information or any essential ground truth on a reliable, centralized service provider, (e.g., Coinbase) for its pricing API in order to strike and settle games. However, even when a single Ether was valued at less than \$100, simple user bids were high in transaction fee friction. In short term games, this effect was amplified, resulting in prohibitively expensive decentralized bidding models and the need for centralized server management of gameplay.

L2 and sidechain solutions have become a popular and viable alternative to manage high-frequency transactions and provide cost savings in general. YOLOrekt has chosen to build its initial platform on the

Polygon network on account of its high transaction speed, negligible fees, and full EVM support. To prevent double-spend attacks via block reorganization, and given Polygon's current block validation time and validator power distribution, there is a lower bound settlement time of approximately 4 minutes.

Extensible Design

In light of the widely recognized brittleness and immutability of deployed contract structure, one of the most important features of the YOLOrekt smart contract design is its flexibility. Contracts designs take advantage of upgradeable proxy patterns for interface and implementation changes, inline assembly code, and storage patterns that allow for the migration of data into upgraded storage configurations. (More details on contract design and the YOLO smart contract family will be provided in the upcoming whitepaper.) The YOLO, YLP, and LYLP tokens are ERC20-compliant and can be seamlessly bridged between Ethereum and Polygon networks, as both chains have mirrored token contracts.

Future Markets

As part of its upcoming launch, YOLOrekt will allow users to predict the short-term fluctuations of various popular assets, including Bitcoin (BTC), Ethereum (ETH), Tesla (TSLA), GameStop (GME), and others. Binary outcome variants, multi-strike price, and multi-outcome games will be added to the game suite. We plan to incrementally add markets in crypto, stocks, and forex. In addition to expanding on the set of assets, we also plan to launch short-term, in-game sports markets. The future is now, the future is YOLO.