

STONKS

WHITEPAPER

v. 1.1.

16.04.2022



www.stonks.cash
hello@stonks.cash
Doggetti

1. The purpose

Making money in the cryptocurrency market (actually in any financial) is based on predicting the future, and the Stonks platform is designed to facilitate this. The main goal is to create a decentralised platform where users can bet among themselves on the outcome of future events on the financial markets. The way to achieve this goal is to create a unique in DeFi world cryptocurrency options trading system.

In contrast to the solutions known in the DeFi world, we want our platform to resemble classic stock exchanges in terms of its interface. We are aware that the very concept of options is not accessible to new users, but the way it will be presented to users will make them eager to use it.

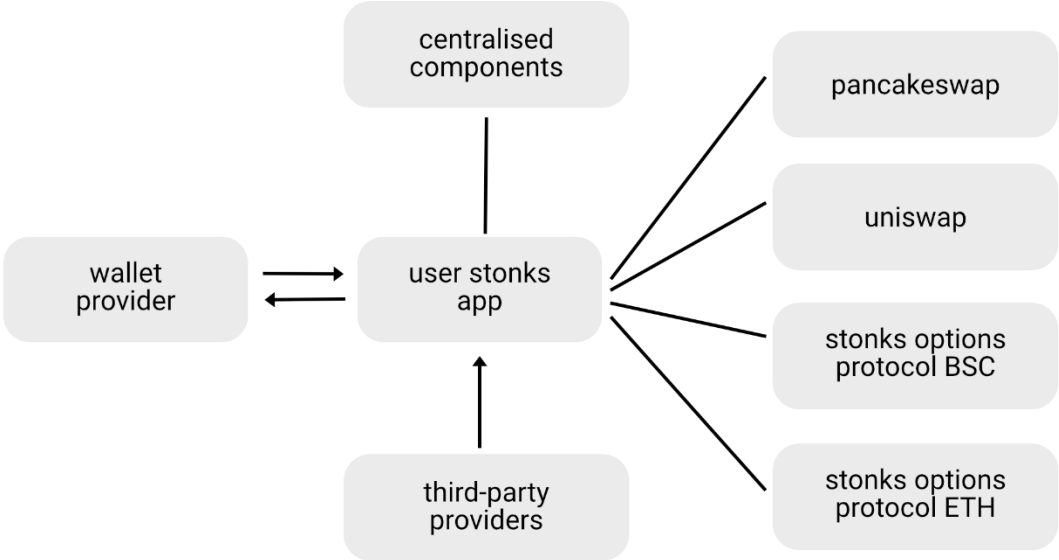
It is also important not to be limited to a single blockchain therefore the Stonks platform will allow investing on as many blockchains as possible without being in opposition to existing DeFi protocols, but rather integrating those useful for the idea into one platform.

We assume that anonymity is a guarantee of the freedom of investing, therefore to use the market it is enough to connect to the application using one of the available wallet providers such as metamask.

We are convinced that freedom of speculation can only be realised under conditions of full trust and transparency, therefore all the key components of our application are decentralised and work on-chain.

2. User web app

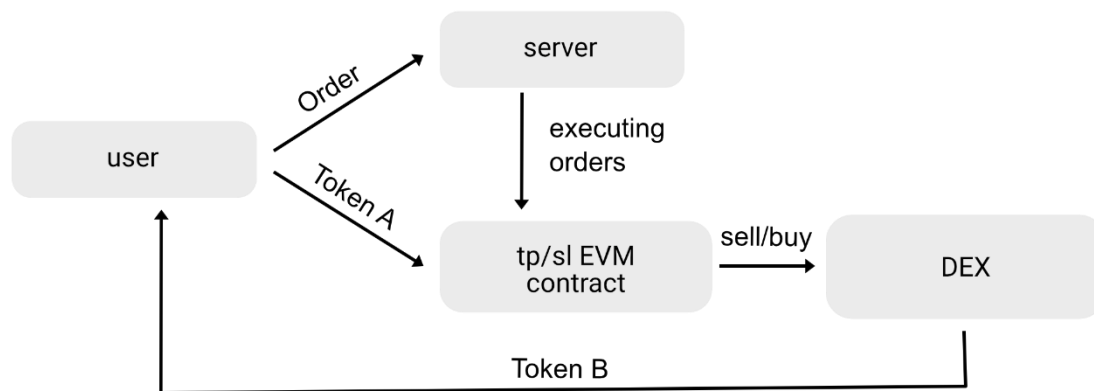
The user app will offer features known from the largest centralised exchanges. Live candlestick chart, limit orders, portfolio overview, trades list and more. The application will be compatible with various blockchains and various AMM protocols: initially ETH, BSC, pancakeswap and uniswap. From app level the user will have access to stonks pool options and DAO functionality. The application will also allow access to analytical tools such as wallet scanner, portfolio analysis tool and other features known from such platform as dexTools.



Stonks platform model

3. Limit orders

A limit order is used to swap crypto at a pre-determined ratio and will not execute unless the ratio meets those qualifications. By using a buy limit order, the investor is guaranteed to pay that price in swapped crypto or less. While the price is guaranteed, the filling of the order is not, and limit orders will not be executed unless the crypto price meets the order qualifications. Technically, the user sends cryptocurrency to the address of the limit order contract. Until the order is executed, the user can withdraw the deposited cryptocurrency by cancelling the order. The execution of the order is triggered by an algorithm running on the server which continuously monitors the exchange price of a given cryptocurrency through a query to the DEX protocol.



limit orders model

4. Options

4.1. Introduction

Options provide a whole new way to make money on cryptocurrencies - on dips, rises and even when the market is in a period of low volatility. There are two types of options - call and put options.

A call option represents the right to buy a cryptocurrency at the strike price on the option expiry date. The buyer of the call option assumes that the price of the asset will rise.

A put option is the opposite of a call option - it represents the right to sell the cryptocurrency at the strike price on the expiry date. So the buyer in this scenario assumes that the price of the underlying cryptocurrency will fall.

The option has a strike price and an exercise date. The buyer pays the seller a price (premium), which is the seller's profit. The premium is determined according to the pricing model.

The buyer of the option may or may not exercise it.

4.2. Decentralised options trading

The option seller deposits cryptocurrency (or stablecoin equivalent) into the liquidity pool for which he is immediately rewarded. The value of the reward is calculated based on the Black-Scholes model. The seller chooses whether to create a sell or buy option. From the user interface, it looks like the seller chooses whether he "bets" that the crypto will not fall or rise above a level he specifies within a time frame he specifies. If the seller is right, he receives his deposit back after his specified time. If the seller is wrong, he only receives the difference between the price of the underlying at the time the option was created and the time of exercise.

An option buyer can buy options from a liquidity pool (described below). The option buyer assumes the opposite scenario to the seller, for example, if the price of a given cryptocurrency rises above the levels assumed by the option seller, the buyer can exercise the option and receive the cryptocurrencies at a price lower than the current price and thus realize a profit.

4.3. Option pools

The liquidity pool buys all options sold by users and pays them an immediate reward (premium). The liquidity pool makes money if the sellers are wrong in their predictions - it is a de facto buyer of options. In addition, the liquidity pool sells options to users who want to buy them at a price higher than the option value - in this case it earns a spread by delegating the risk that sellers are right to users who buy options. Liquidity providers reap dividends from the pool's profits in proportion to their share in providing liquidity. There are multiple liquidity pools for individual cryptocurrencies and a shared pool. If the seller is the first seller of options on a particular cryptocurrency a dedicated liquidity pool is created for that cryptocurrency. The shared pool adds liquidity to the individual liquidity pools, which is important when creating a liquidity pool for a new cryptocurrency. In order for a liquidity pool to be maintained for a cryptocurrency (i.e. for options to be sold) that cryptocurrency must meet a number of volume and market size criteria for that cryptocurrency on decentralised exchanges.

4.4. Option pricing model

Option pricing is done in a non custodial and automated manner based on three components: 1. a mathematical Black-Scholes model using six variables such as volatility, type of option, underlying stock price, time, strike price, and risk-free rate. 2. a third-party provider used to determine the price of an asset such as oracles (The Chainlink Oracles) or a DEX. 3. An implied volatility indicator based on the percentage of utilisation of the liquidity pool of an option multiplied by the risk factor associated with the crypto asset.

$$C = S_t N(d_1) - K e^{-rt} N(d_2)$$

where:

$$d_1 = \frac{\ln \frac{S_t}{K} + (r + \frac{\sigma_s^2}{2}) t}{\sigma_s \sqrt{t}}$$

and

$$d_2 = d_1 - \sigma_s \sqrt{t}$$

where:

C = Call option price

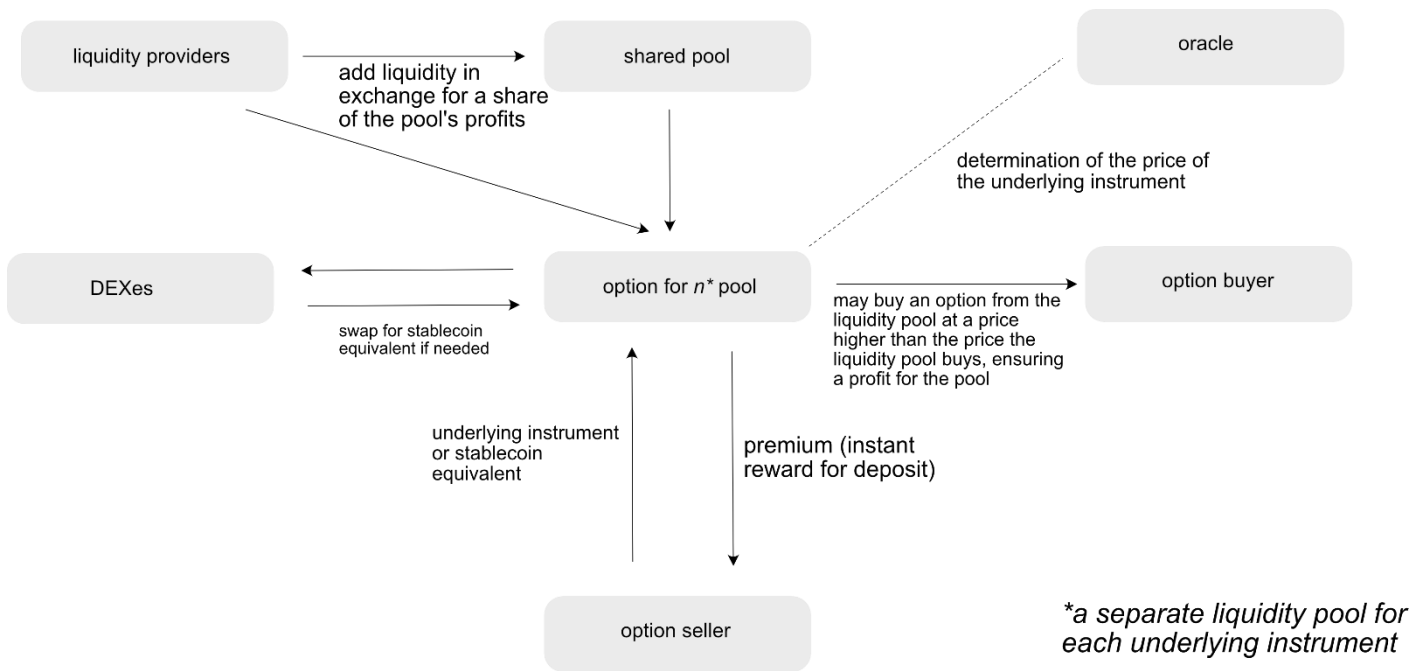
S = Current stock (or other underlying) price

K = Strike price

r = Risk-free interest rate

t = Time to maturity

N = A normal distribution



5. Centralised components

Certain components such as the limit order execution mechanism or the aggregation of blockchain data used to display charts are expensive to maintain on-chain, which is why we temporarily use centralized servers. The current development of projects like Chainlink (oracles) and The Graph (indexing blockchains) gives hope for decentralising these components in the future.

6. Token

Token stonks runs on a smart contract running on the Ethereum Virtual Machine (EVM). The token will function on all EVM compatible blockchains. Changing the chain will be done via a simple bridge at a ratio of 1:1. The value of individual tokens will be determined by arbitrage.

6.1. ERC-20 & BEP-20

The token implements functionality known from RFI (Frictionless Yield Generation) tokens. Tokenomics is based on several popular assumptions.

- Depreciating Supply
- Token Reflections
- Automated Liquidity Acquisition

In other words, with each transaction in a particular token market, the number of tokens in circulation decreases leading to an increase in the value of the token. Owning a token allows you to passively generate rewards. And the pool of liquidity is continually replenished through the "*_swapAndLiquify*" method popular in these types of smart contracts, causing market volatility to decrease.

Total supply: 100,000,000,000,000 STONKS

10% of total supply is allocated to reserve (CeFi listing etc.)

4% of all transactions is distributed to STONK's holders

3% transaction fee is allocated to marketing

3% transactions is added to a liquidity pool to generate an ever-rising price floor

6.2. Utility

The stonks token (regardless of the blockchain it runs on) serves two primary functions. In addition to passive profit from reflection, it allows for "active" earning by staking tokens in the stonks platform. Profits are paid out in the stablecoin of your choice and are generated from the profits of the stonks platform which consist of: 1. profits from tools on the platform - such as limit orders, surplus earned from the options liquidity pool, profits from the liquidity pool from the prediction market (in the future).

It allows you to participate in decisions about the direction of the platform. Stonks is a community project in which everyone can participate by contributing to the project. The project code is made available on an open-source basis. As the number of stonks token holders increases, a tool will be made available to vote on proposed solutions based on the stonks tokens held.