**“Addressing Different Blockchain Implementations of Decentralized Finance.”**

**By**

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**Abstract:**

This narrative will explore and argue the validity of the security aspects Decentralized Finance(DeFi) provides through popular DeFi protocols and their proprietary blockchain implementations. This was done by conducting research on popular DeFi protocols with each of them having a different blockchain implementation as their underlying architecture. Each one of these DeFi protocols provides security to transactions in their own independent way. The information provided for each individual use case includes validity to why decentralized finance transactions are secure through these DeFi protocols’ blockchain implementations, while also bringing to light the potential flaws that needed to be addressed. A comparison review was conducted between the DeFi protocols to better understand and grasp when and where to implement their blockchain architecture and leads to an argument on to why one would take precedence in certain use cases.

**Keywords:**

Blockchain, Cryptocurrency, DeFi, DEX, Automated Market Maker,

**Introduction:**

**Use Case: Uniswap  (UNI)**

**https://uniswap.org/blog/uniswap-v3/**

As a byproduct of per-LP custom price curves, liquidity positions are no longer fungible and are not represented as ERC20 tokens in the core protocol.

Instead, LP positions will be represented by non-fungible tokens (NFTs).

Uniswap v2 introduced time weighted average price (TWAP) oracles. These oracles serve as a critical piece of DeFi infrastructure, and have been integrated into dozens of projects, including Compound and Reflexer.

V2 oracles work by storing cumulative sums of Uniswap pair prices on a per-second basis. These price sums can be checked once at the beginning of a period and once at the end to calculate an accurate TWAP over that period.

Uniswap v3 offers significant improvements to the TWAP oracle, making it possible to calculate any recent TWAP within the past ~9 days in a single on-chain call. This is achieved by storing an array of cumulative sums instead of just one.

**Use Case: 0x (ZRX)**

**Use Case: Aave (AAVE)**

**Use Case: yEarn(YFI)**

NOTES:

1inch-is a DeFi aggregator and a decentralized exchange with smart routing that minimizes price slippage and finds the optimal trade for the users.

KAVA A decentralized financial services platform. Kava's principle product is a DeFi lending platform for cryptocurrencies.

The Graph is an indexing protocol and global API for organizing blockchain data and making it easily accessible with GraphQL.

KAVA

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