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Limit order for Decentralized Exchanges on Blockchain

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Decentralized Exchanges allow users to trade assets using Automated Market Makers (AMM) with a smart contract. This enhances the traditional way of trading because there is no schedule (DEX is open 24/7), nor a counter-party required for an exchange.
This paper addresses the challenge of implementing Limit Order functionality on Decentralized Exchanges (DEXs). This allows users to create an order at a certain value. We developed this solution for the MultiversX blockchain, which right now allows users to trade only at the current price. We proposes a solution in the form of a decentralized orderbook. In this model, limit orders match each other (when buy and sell prices align) or serve against an Automated Market Maker (AMM) upon meeting predefined trigger conditions. Importantly, all orders are stored and settled on-chain. Our model incorporates a Rust Smart Contract for order management and a Python-based Keeper Bot for real-time market monitoring. Moreover, we introduce special economic incentives to mimic a Centralised Limit Order Book (CLOB),
offering greater flexibility and control to traders.
Our research concludes that introducing a decentralized orderbook can significantly boost trading efficiency in DEXs, thus underscoring the viability and benefits of our proposed solution.

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