By

BChain Dynamics

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SimpleFi

Sending Gasless Transaction

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Table of Content

Content	Page No
Abstract	4
Project Description	
Tools/Technologies To Be Used	
Advantages	
Features/Functionalities	

Abstract

"The greatest victory is that which requires no battle." — Sun Tzu

Meta transactions allow users to execute transactions on the blockchain with zero transaction fees. It builds a more seamless UX since users don't need to understand the inner workings like go to an exchange, pass a KYC process and wait for approval, transfer money from their bank, buy ETH, install MetaMask, learn how to use it and transfer ETH to it, etc.Due to this onboarding hurdle users are not coming and dapps are not taking off.

Native meta transactions let users signal directly to smart contracts with signed messages. For instance, one could transfer an ERC721 (NFTy) that you own to a friend without ever having any ETH to pay for gas.

Meta transaction involves signing a transaction with a key that doesn't own ETH, and then wrapping it with another transaction signed by a key that does own ETH, to pay for the gas. The recipient contract "peels" the outer transaction and uses the inner one.

In meta transaction a third-party (called a *relayer*) can send another user's transactions and pay themselves for the gas cost. In this scheme, users sign messages (not transactions) containing information about a transaction they would like to execute. Relayers are then responsible for signing valid Ethereum transactions with this information and sending them to the network, paying for the gas cost.

Project Description

1. Meta transactions and how to sign these transactions.

2. Implementing ERC20 token

3. By binding all these together, will need to create a frontend that interacts with these contracts.

Tools/Technologies To Be Used

1. Solidity
2. Reactjs
3. Nodejs
4. Truffle
5. Ganache
6. Javascript
7. Meta Mask

Advantages

Ethereum Gas Station Network (GSN) abstracts away gas to minimize on boarding & UX friction for dapps. With GSN, gasless clients can interact with Ethereum contracts without users needing ETH for transaction fees. The GSN is a decentralized system that improves dapp usability without sacrificing security.

Features/Functionalities

The Gas Station Network(GSN) is a decentralized network of relayers, publishing their fees and URLs on the blockchain, accepting etherless transactions from users, filling them with gas by signing them, returning them to the user, relaying them to the blockchain and getting compensated for their effort.