



ETHEREUM DECENTRALISED IDENTITY SMART CONTRACT

BY,
Abishek Anand
Arjun K
Sanjay M
Sanjith V

Abstract

This abstract introduces a novel approach to decentralized identity management leveraging Ethereum's smart contract technology. The proposed system aims to revolutionize identity verification and authentication by harnessing the immutable and secure nature of blockchain. The smart contract architecture enables individuals to take control of their digital identities, ensuring privacy, security, and interoperability across various platforms. This abstract outlines the core components, benefits, challenges, and potential applications of this decentralized identity solution within the Ethereum network.

Problem Statement

- Blockchain is a technology that enables identities to be stored transparently. It offers decentralized nodes for end-to-end verification advantages. This technology is a replacement for traditional identity management with distributed, nonrepudiation, and security protection characteristics.
- Design a smart contract using the Ethereum blockchain where you should be able to store the identity details in the blockchain and should be able to query the details of the identity from the blockchain

Our Solution

Creating a decentralized identity (DID) smart contract on the Ethereum blockchain is a fascinating and impactful project. Decentralized identity solutions aim to provide users with control over their personal data and identities while ensuring security and privacy. Implementing this involves deploying smart contracts that manage identity information, authentication, and authorization, allowing for a trustless and secure system for identity management.

Scope Of The Project

The scope of a project for Ethereum's decentralized identity smart contract can be broad and complex. Here is a general outline of the potential scope of such a project

Requirement Analysis: Understand the specific requirements and use cases for the decentralized identity smart contract. Identify the necessary features and functionalities the smart contract must have, such as user authentication, identity verification, and data privacy.

Testing and Quality Assurance: Conduct thorough testing to verify that the smart contract functions as intended and is free from vulnerabilities. Implement automated testing and code reviews to maintain high-quality code and security standards.

Steps To Complete The Project

Step 1:-

Open the Zip file and download the zip file. Extract all zip files

Step 2 :

1. Open vs code in the left top select open folder. Select extracted file and open .
2. Select the projectname.sol file and copy the code.
3. Open the remix ide platform and create a new file by giving the name of projectname.sol and paste the code which you copied from vs code.
4. Click on solidity compiler and click compile the projectname.sol

5. Deploy the smart contract by clicking on the deploy and run transaction.
6. select injected provider - MetaMask. In environment
7. Click on deploy. Automatically MetaMask will open and give confirmation. You will get a pop up click on ok.
8. In the Deployed contract you can see one address copy the address.
9. Open vs code and search for the connector.js. In contract.js you can paste the address at the bottom of the code. In export const address.
10. Save the code.

Step 3:

open file explorer

1. Open the extracted file and click on the folder.
2. Open src, and search for utiles.
3. You can see the frontend files. Select all the things at the top in the search bar by clicking alt+ A. Search for cmd
4. Open cmd enter commands `npm install npm bootstrap npm start`
5. It will install all the packages and after completing it will open {LOCALHOST IP ADDRESS} copy the address and open it to chrome so you can see the frontend of your project.

Output :

Remix - Ethereum IDE x React App x +

localhost:3000

Apps Gmail YouTube Maps Cloud Computing S... Online Java Compil...

Identity On Blockchain

Connect Wallet

Enter Identity ID

Enter Name

Enter Email

Enter Address

Register Identity

User Metamask address

Get Identity Details

Conclusion

In conclusion, Ethereum's revolutionary blockchain technology has significantly paved the way for the development and implementation of decentralized identity smart contracts, enabling users to control their digital identities securely and privately. Through Ethereum's robust infrastructure, these smart contracts facilitate the creation of unique, self-sovereign digital identities, empowering individuals with greater control over their personal data and online interactions. By leveraging the immutability and transparency of the blockchain, Ethereum's decentralized identity smart contracts offer a promising solution to the challenges of identity management, fostering trust, security, and inclusivity in the digital ecosystem.

Thank You!!